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=> fil reg
FILE 'REGISTRY' ENTERED AT 08:07:45 ON 18 DEC 2001
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STRUCTURE FILE UPDATES:   16 DEC 2001  HIGHEST RN 375793-75-2
DICTIONARY FILE UPDATES:  16 DEC 2001  HIGHEST RN 375793-75-2

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

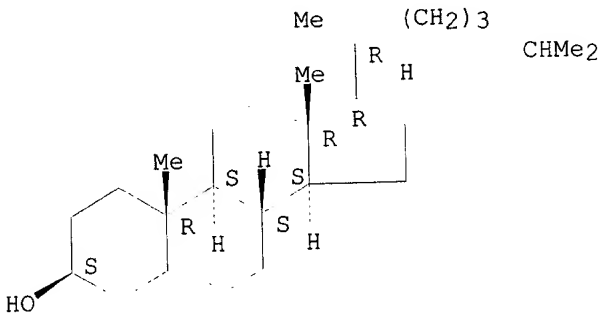
Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can l1

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2001 ACS
RN   57-88-5  REGISTRY
CN   Cholest-5-en-3-ol (3.beta.)- (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Cholesterol (8CI)
OTHER NAMES:
CN   (-)-Cholesterol
CN   .DELTA.5-Cholesten-3.beta.-ol
CN   3.beta.-Hydroxycholest-5-ene
CN   5:6-Cholesten-3.beta.-ol
CN   Cholest-5-en-3.beta.-ol
CN   Cholesterin
CN   Cholesteryl alcohol
CN   Dythol
CN   Lidinit
CN   Lidinite
CN   Provitamin D
FS   STEREOSEARCH
DR   209124-38-9, 218965-24-3
MF   C27 H46 O
CI   COM
LC   STN Files:   ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
       BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
       CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
       DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT,
       IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*,
       PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TOXLIT, TULSA, ULIDAT, USAN,
       USPAT2, USPATFULL, VETU, VTB
         (*File contains numerically searchable property data)
     Other Sources:   DSL**, EINECS**, TSCA**
         (**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.
```

Point of Contact:
Jan Delaval
Librarian-Physical Sciences
CM1 1E01 Tel: 308-4498



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

74974 REFERENCES IN FILE CA (1967 TO DATE)
8018 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
75048 REFERENCES IN FILE CAPLUS (1967 TO DATE)
15 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 135:376720

REFERENCE 2: 135:376708

REFERENCE 3: 135:376650

REFERENCE 4: 135:376617

REFERENCE 5: 135:376535

REFERENCE 6: 135:375389

REFERENCE 7: 135:371889

REFERENCE 8: 135:371043

REFERENCE 9: 135:371034

REFERENCE 10: 135:371032

=> d ide can 12

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 9028-76-6 REGISTRY
CN Oxidase, cholesterol (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3-Hydroxysteroid oxidase
CN Cholesterin oxidase
CN **Cholesterol oxidase**
CN E.C. 1.1.3.6
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, NAPRALERT, PROMT, TOXCENTER, TOXLIT, USPATFULL
Other Sources: EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
1042 REFERENCES IN FILE CA (1967 TO DATE)
42 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1045 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:368835

REFERENCE 2: 135:354669

REFERENCE 3: 135:330496

REFERENCE 4: 135:315425

REFERENCE 5: 135:285171

REFERENCE 6: 135:284907

REFERENCE 7: 135:269255

REFERENCE 8: 135:254587

REFERENCE 9: 135:238850

REFERENCE 10: 135:223735

=> d ide can 13

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 67775-34-2 REGISTRY
CN Dehydrogenase, cholesterol (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **Cholesterol dehydrogenase**
CN NAD(P)-dependent cholesterol dehydrogenase
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, BIOSIS, CA, CAPLUS, TOXCENTER, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
81 REFERENCES IN FILE CA (1967 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
81 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:368694

REFERENCE 2: 135:328950

REFERENCE 3: 135:192498

REFERENCE 4: 135:149624

REFERENCE 5: 134:350257

REFERENCE 6: 134:97504

REFERENCE 7: 134:53505

REFERENCE 8: 134:27297

REFERENCE 9: 133:307286

REFERENCE 10: 133:190189

=> d ide can 14

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 9026-00-0 REGISTRY
CN Esterase, cholesterol (9CI) (CA INDEX NAME)
OTHER NAMES:

CN Bile salt-stimulated lipase
CN Cholesterase
CN Cholesterin esterase
CN Cholesterol ester hydrolase
CN **Cholesterol esterase**
CN Cholesteryl ester hydrolase
CN Cholesteryl esterase
CN E.C. 3.1.1.13
CN Lysosomal acid lipase
CN Neutral cholesteryl ester hydrolase
CN Sterol ester hydrolase
CN Sterol esterase
DR 9040-56-6
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB, PROMT, TOXCENTER, TOXLIT, USPATFULL
Other Sources: EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
1586 REFERENCES IN FILE CA (1967 TO DATE)
21 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1588 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:370722

REFERENCE 2: 135:368694

REFERENCE 3: 135:348857

REFERENCE 4: 135:348856

REFERENCE 5: 135:341771

REFERENCE 6: 135:328950

REFERENCE 7: 135:283013

REFERENCE 8: 135:255595

REFERENCE 9: 135:254050

REFERENCE 10: 135:252790

=> d ide can 15

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 9004-02-8 REGISTRY
CN Lipase, lipoprotein (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Clearing factor
CN Clearing factor lipase
CN E.C. 3.1.1.34
CN Lipemia-clearing factor
CN **Lipoprotein lipase**
CN LPL Amano 3
CN Postheparin lipase
CN Postheparin plasma lipoprotein lipase
DR 9007-29-8, 9013-98-3
MF Unspecified
CI MAN
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN,

CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, NIOSHTIC, PROMT, TOXCENTER, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
4864 REFERENCES IN FILE CA (1967 TO DATE)
28 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4867 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:370204

REFERENCE 2: 135:368759

REFERENCE 3: 135:366677

REFERENCE 4: 135:357285

REFERENCE 5: 135:357279

REFERENCE 6: 135:356359

REFERENCE 7: 135:356176

REFERENCE 8: 135:352751

REFERENCE 9: 135:343034

REFERENCE 10: 135:342681

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 08:08:08 ON 18 DEC 2001
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FILE COVERS 1907 - 18 Dec 2001 VOL 135 ISS 26
FILE LAST UPDATED: 17 Dec 2001 (20011217/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGlstRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

HCAplus now provides online access to patents and literature covered in CA from 1907 to the present. Bibliographic information and abstracts were added in 2001 for over 3.8 million records from 1907-1966.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all tot 150

L50 ANSWER 1 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:622537 HCAPLUS
DN 135:192498
TI Method and reagent for measuring **cholesterol** in remnant-like lipoprotein
IN Miyauchi, Kazuto
PA Kyowa Medex Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS C12Q001-26; C12Q001-28; C12Q001-32; C12Q001-44; G01N033-92
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001231597	A2	20010828	JP 2000-50902	20000228
	US 2001031479	A1	20011018	US 2001-788393	20010221
	EP 1132482	A2	20010912	EP 2001-1104481	20010228
	EP 1132482	A3	20010926		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRAI JP 2000-50902 A 20000228

AB A convenient enzymic method is provided for measuring **cholesterol** in remnant-like lipoprotein in a biol. sample with high sensitivity without requiring a sample sepn. operation. In this method, remnant-like lipoprotein is detd. by measuring hydrogen peroxide or a reduced-type coenzyme generated upon reacting **cholesterol esterase**, **cholesterol oxidase** (or **cholesterol dehydrogenase**), and a phospholipid-hydrolyzing enzyme (e.g., phospholipase D, phospholipase C, phospholipase A2) with the biol. sample added with a **surfactant** (e.g., polyoxyalkylene deriv., polyoxyethylene-polyoxypropylene copolymer deriv.). The reagent used in this method is also provided.

ST **cholesterol** remnant lipoprotein enzymic analysis **surfactant**

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(copolymer with polyoxyethylene; method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(copolymer with polyoxypropylene; alkylether; long-chain branched alkylether; method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT **Blood analysis**
Surfactants
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(phospholipid-hydrolyzing; method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT Coenzymes
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)

(reduced-type; method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(remnant-like; method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT **57-88-5, Cholesterol,** analysis
RL: ANT (Analyte); ANST (Analytical study)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT 9001-84-7, Phospholipase A2 9001-86-9, Phospholipase C 9001-87-0, Phospholipase D **9026-00-0**, Esterase, **cholesterol**
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

IT 25322-68-3D, copolymer with polyoxypropylene; alkylether; long-chain branched alkylether 25322-69-4D, copolymer with polyoxyethylene 51312-27-7, Emulgen L-40 99734-09-5, Blaunon TSP 50 104552-09-2 106392-12-5, Pluronic F-108 357165-89-0, Nissan Unilube MT 0620B
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for measuring **cholesterol** in remnant-like lipoprotein)

L50 ANSWER 2 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:504354 HCAPLUS
TI Studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**
AU Yamadate, Shuukoh; Ishizawa, Takashi; Araki, Hideo; Sekiguchi, Mitsuo; Iwata, Susumu; Kawano, Kinya; Yamamoto, Shoko
CS Dep. Clin. Lab., Itabashi Hosp., Nihon Univ. Sch. Med., 30-1 Kamimachi, Oyaguchi, Itabashi-ku, Tokyo, 173-8610, Japan
SO Seibutsu Shiryo Bunseki (2001), 24(3), 223-228
CODEN: SSBUEL; ISSN: 0913-3763
PB Seibutsu Shiryo Bunseki Kagakkai
DT Journal
LA Japanese
CC **9-2** (**Biochemical Methods**)
AB We have evaluated a new homogeneous method for the measurement of HDL-**cholesterol** (HDL-C) without polyanions and Mg **ions**. The assay is based on two-reagent assay format. In the first step, non-HDL unesterified **cholesterol** is eliminated by **cholesterol oxidase**. The generated peroxide reacts with chromogen in the presence of peroxidase, yielding a colorless product. In the second step, HDL is selectively solubilized by a lipoprotein-specific detergent. The concn. of HDL-C is quant. detd. by enzyme reactions of **cholesterol esterase** and **cholesterol oxidase**, in the presence of chromogen, 4-aminoantipyrine and peroxidase. Because this method does not use polyanions and Mg **ions**, the absorbance change during the first reaction is very small and no cross contamination was found for Mg detn.
ST homogeneous **serum** HDL **cholesterol** detn; polyanion magnesium free detn HDL **cholesterol serum**; selective solubilization detergent HDL **cholesterol** detn
IT INDEXING IN PROGRESS
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(high-d., **cholesterol** ester-contg.; studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**)

IT **Blood analysis**
Blood serum
(studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**)
IT 83-07-8, 4-Aminoantipyrine
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(color developer; studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**)
IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**)
IT 25322-68-3D, derivs.
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**surfactant**; studies on homogeneous method for **serum** HDL-**cholesterol** without polyanions and magnesium **ions**)

L50 ANSWER 3 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:336519 HCAPLUS
DN 134:350257
TI Enzymic method for measuring lipoprotein **cholesterol**
IN Sawayanagi, Toyoharu; Koyama, Tamami; Sato, Hajime
PA Showa Denko K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-92
ICS C12N009-02; C12N009-04; C12N009-16; C12Q001-26; C12Q001-28; C12Q001-32; C12Q001-46; C12Q001-60
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001124780	A2	20010511	JP 1999-307329	19991028

AB A highly accurate and widely applicable enzymic method is provided for measuring a lipoprotein **cholesterol** (e.g., HDL **cholesterol**, LDL **cholesterol**) in a sample contg. lipoproteins (e.g., **blood serum**, **plasma**) without having an influence by a **blood** component possessing a **surface active** function. Furthermore, the method does not generate any factors interfering with an optical measurement. In this method, a lipoprotein **cholesterol** is measured by quantitating a compd. consumed or formed in the enzymic reactions upon reacting enzymes (e.g., **cholesterol esterase**, **cholesterol oxidase**, **cholesterol dehydrogenase**) with a sample contg. lipoproteins. The method comprises a first step for selectively reacting with HDL **cholesterol** or **cholesterols** other than LDL **cholesterol** using a particular polymer (mol. wt.: 5,000-500,000 dalton, concn.: 0.001-1%) and a first **surfactant** (e.g., bile acid deriv., zwitterionic **surfactant**), and a second step for selectively reacting with LDL **cholesterol** using a second **surfactant** (e.g., **nonionic surfactant**).
ST lipoprotein **cholesterol** HDL LDL enzymic analysis; **cholesterol esterase** oxidase hydrogenase **surfactant** polymer
IT Alkenes, analysis
RL: ARU (Analytical role, unclassified); RCT (Reactant); ANST (Analytical study)
(1-; copolymer with maleic acid, acrylic acid, methacrylic acid; enzymic method for measuring lipoprotein **cholesterol**)
IT Bile acids

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(deriv.; enzymic method for measuring lipoprotein **cholesterol**
)

IT **Blood analysis**
Blood plasma
Blood serum
Concentration (condition)
Hydrophile-lipophile balance value
Molecular weight
Surfactants
pH
(enzymic method for measuring lipoprotein **cholesterol**)

IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(enzymic method for measuring lipoprotein **cholesterol**)

IT Enzymes, uses
Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(enzymic method for measuring lipoprotein **cholesterol**)

IT Polymers, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(enzymic method for measuring lipoprotein **cholesterol**)

IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(high-d.; enzymic method for measuring lipoprotein **cholesterol**
)

IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(low-d.; enzymic method for measuring lipoprotein **cholesterol**
)

IT **Surfactants**
(**nonionic**; enzymic method for measuring lipoprotein **cholesterol**)

IT **Surfactants**
(zwitterionic; enzymic method for measuring lipoprotein **cholesterol**)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(enzymic method for measuring lipoprotein **cholesterol**)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(enzymic method for measuring lipoprotein **cholesterol**)

IT 361-09-1, Sodium cholate 9002-92-0, Emulgen 108 9004-95-9 9004-98-2, Emulgen 408 9016-45-9, Emulgen 903
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(enzymic method for measuring lipoprotein **cholesterol**)

IT 79-10-7D, Acrylic acid, copolymer with 1-olefin 110-16-7D, Maleic acid, copolymer with 1-olefin 18358-13-9D, Methacrylate, copolymer with 1-olefin, analysis
RL: ARU (Analytical role, unclassified); RCT (Reactant); ANST (Analytical study)
(enzymic method for measuring lipoprotein **cholesterol**)

L50 ANSWER 4 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:911462 HCAPLUS
DN 134:68410
TI Apparatus and method for determining substances contained in a body fluid
IN Mitchen, Joel R.; Anaokar, Sunil G.; Pasqua, John J.; Crispino, Michele J.; McCaffery, Terrence M.; Connolly, James; Zeng, Hyeon-Sook Lee
PA Polymer Technology Systems, Inc., USA
SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-44
ICS C12Q001-60; C12Q001-26; C12Q001-28; C12Q001-00; C08B037-16
CC **9-1** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078998	A1	20001228	WO 2000-US16816	20000616

W: US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRAI US 1999-139983 P 19990618

AB The invention describes methods for detg. **cholesterol** in low d. lipoproteins (LDL) in a living sample by reacting the sample with a reagent in the presence of an **non-ionic surfactant** and at least one member selected from the group consisting of cyclodextrin and derivs. thereof using novel techniques. An app. for the optoelec. evaluation of test paper strips for use in the methods for detection of certain analytes in **blood** or other body fluids is also provided. A reflectance photometer is shown which is used to perform the methods of this invention and includes various features, including a lot no. reader wherein if the test strip does not match a memory module, a test is not performed, and the user is instructed to insert a correct memory module.

ST app analysis body fluid test strip; reflectance photometer body fluid analysis; **cholesterol** LDL **blood** analysis
IT Memory devices
(ROM (read only); app. and method for detg. substances in body fluids)
IT Betaines
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(alkyl; app. and method for detg. substances in body fluids)
IT **Surfactants**
(amphoteric; app. and method for detg. substances in body fluids)
IT Analytical apparatus
Blood analysis
Body fluid
Electrooptical instruments
Membranes, nonbiological
Memory devices
Reflection spectroscopy
Surfactants
(app. and method for detg. substances in body fluids)
IT Glycerides, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(app. and method for detg. substances in body fluids)
IT Amine oxides
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(app. and method for detg. substances in body fluids)
IT Amino acids, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(app. and method for detg. substances in body fluids)
IT Sulfobetaines
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(app. and method for detg. substances in body fluids)
IT Electron acceptors
(color-changing; app. and method for detg. substances in body fluids)
IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(di-Me, Me hydrogen polysiloxane-; app. and method for detg. substances in body fluids)

IT Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(di-Me, Me hydrogen, polyoxyalkylene-; app. and method for detg. substances in body fluids)

IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high-d.; app. and method for detg. substances in body fluids)

IT Onium compounds
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(imidazolium compds., betaines; app. and method for detg. substances in body fluids)

IT Reagents
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(in **cholesterol** detn. in LDL; app. and method for detg. substances in body fluids)

IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(low-d., **cholesterol** detn. in; app. and method for detg. substances in body fluids)

IT **Surfactants**
(**nonionic**; app. and method for detg. substances in body fluids)

IT Albumins, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**serum**, bovine; app. and method for detg. substances in body fluids)

IT Paper
(test strips; app. and method for detg. substances in body fluids)

IT 625-72-9, D-3-Hydroxybutyric acid
RL: ANT (Analyte); ANST (Analytical study)
(app. and method for detg. substances in body fluids)

IT 50-99-7, D-Glucose, analysis
RL: ANT (Analyte); ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(app. and method for detg. substances in body fluids)

IT 9028-38-0, D-3-Hydroxybutyrate dehydrogenase
RL: ARG (Analytical reagent use); DEV (Device component use); PRP (Properties); ANST (Analytical study); USES (Uses)
(app. and method for detg. substances in body fluids)

IT 76-59-5, Bromthymol blue 83-07-8, 4-AAP 591-35-5D, sulfonated 9001-37-0, Glucose oxidase 9002-13-5, Urease 9003-99-0, Peroxidase **9026-00-0, Cholesterol esterase** **9028-76-6, Cholesterol oxidase** 9030-66-4, Glycerol kinase 9046-28-0, Glycerophosphate oxidase 34314-06-2, Tetramethyl benzidine
RL: ARG (Analytical reagent use); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(app. and method for detg. substances in body fluids)

IT 57-48-7, Fructose, analysis 57-50-1, Sucrose, analysis 68-04-2, Sodium citrate 77-92-9, Citric acid, analysis 139-33-3 577-11-7, DOSS 683-10-3, Lauryl betaine 4292-10-8 4432-31-9, MES 7487-88-9, Magnesium sulfate, analysis 7632-05-5, Sodium phosphate 7758-11-4, Dipotassium phosphate 9002-93-1, Triton X-100 9003-39-8, PVP K 30 9004-98-2, Rhodasurf ON-870 15178-76-4 21539-58-2, Sodium N-lauroyl-N-methyl-.beta.-alanine 28299-33-4D, Imidazoline, derivs. 59149-04-1D, N-Carboxymethyl-N-hydroxyethylimidazolinium betaine, 2-alkyl derivs. 75621-03-3, CHAPS 117924-43-3, Antifoam 1520 146225-83-4D,

derivs.
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(app. and method for detg. substances in body fluids)
IT 57-13-6, Urea, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**blood** nitrogen; app. and method for detg. substances in body fluids)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detn. in LDL; app. and method for detg. substances in body fluids)
IT 9013-55-2, PTA
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(in HDL detn.; app. and method for detg. substances in body fluids)
IT 12619-70-4, Cyclodextrin 12619-70-4D, Cyclodextrin, derivs. 51166-72-4 79647-56-6, Poly-.beta.-cyclodextrin
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(in **cholesterol** detn. in LDL; app. and method for detg. substances in body fluids)
RE.CNT 3
RE
(1) Futatsugi; US 5879901 A 1999 HCAPLUS
(2) Miki; US 5814472 A 1998 HCAPLUS
(3) Miyauchi; US 5807696 A 1998 HCAPLUS

L50 ANSWER 5 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:833008 HCAPLUS
DN 133:360592
TI Method and reagent for measuring lipoprotein **cholesterol** by enzymic analysis
IN Sato, Hajime; Koyama, Tamami; Sawayanagi, Toyoji
PA Showa Denko K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS C12Q001-26; C12Q001-44; G01N033-92
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000325097	A2	20001128	JP 1999-142450	19990521

AB A method and a reagent are provided for conveniently and accurately measuring LDL **cholesterol** and HDL **cholesterol** in a sample (e.g., **serum, plasma**) contg. lipoproteins according to the need. The method comprises a process for detg. HDL **cholesterol** by measuring a substance consumed or a substance formed upon reacting enzymes (**cholesterol esterase** and **cholesterol oxidase**) and a first **surfactant** (e.g., bile acid deriv., zwitterionic **surfactant**) with HDL **cholesterol** in a sample contg. lipoproteins, and a process for detg. LDL **cholesterol** by measuring a substance consumed or a substance formed upon reacting enzymes and a second **surfactant** (e.g, **nonionic surfactant** with polyoxyethylene chain) with LDL **cholesterol**. LDL- and HDL-**cholesterol** values with **blood** samples obtained by this method exhibited a high correlation with the values obtained by a reaction HPLC method.
ST lipoprotein **cholesterol** LDL HDL **surfactant** esterase
IT Bile acids
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(deriv.; method and reagent for measuring lipoprotein

cholesterol by enzymic anal.)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(high-d.; method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(low-d.; method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **Blood analysis**
Hydrophile-lipophile balance value
Surfactants
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **Surfactants**
(**nonionic**; method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **Surfactants**
(zwitterionic; method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT 9002-92-0, Emulgen 104P
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Emulgen 108; method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT 83-07-8, 4-Aminoantipyrine 9003-99-0, Peroxidase **9026-00-0**, Esterase, **cholesterol 9028-76-6**, Oxidase, **cholesterol** 96497-76-6, TOOS
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

IT 9004-98-2, Emulgen 408 9016-45-9, Emulgen 903 75621-03-3, CHAPS
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for measuring lipoprotein **cholesterol** by enzymic anal.)

L50 ANSWER 6 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:817511 HCAPLUS
DN 133:346764
TI Method for separating and quantitating lipoproteins by HPLC
IN Haginaka, Atsushi; Yamaguchi, Suguru; Adachi, Tadashi
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07K001-18
CC **9-3** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000319293	A2	20001121	JP 1999-126853	19990507

AB A method is provided for sepg. and quantitating lipoproteins (high d. lipoprotein (HDL), low d. lipoprotein (LDL), very low d. lipoprotein (VLDL), denatured lipoprotein) within a short time with a high accuracy by HPLC. A column is packed with an **ion**-exchanger possessing functional groups (e.g., anion exchange groups) located substantially only on the hydrophilic polymer layer covering the surface of hydrophilic porous particles (e.g., methacrylic acid ester crosslinked copolymer). Each lipoprotein is isolated from a sample liq. contg. lipoproteins upon applying the sample liq. into the column by a HPLC method and eluting it, and quantitated by a fluorescence detection method after reacting enzymes (**cholesterol** ester hydrolase, **cholesterol oxidase**, peroxidase) with the lipoprotein.

ST lipoprotein anion exchange HPLC stationary phase; HDL LDL VLDL sepn quantitation HPLC

IT Functional groups
(diethylaminoethyl; method for sepg. and quantitating lipoproteins by HPLC)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(high-d.; method for sepg. and quantitating lipoproteins by HPLC)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(hydrophilic; method for sepg. and quantitating lipoproteins by HPLC)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(low-d.; method for sepg. and quantitating lipoproteins by HPLC)

IT Anion exchange HPLC
Anion exchangers
Blood analysis
Fluorometry
HPLC stationary phases
Particle size
(method for sepg. and quantitating lipoproteins by HPLC)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(method for sepg. and quantitating lipoproteins by HPLC)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for sepg. and quantitating lipoproteins by HPLC)

IT Porous materials
(particulate; method for sepg. and quantitating lipoproteins by HPLC)

IT Particles
(porous; method for sepg. and quantitating lipoproteins by HPLC)

IT Velocity
(space; method for sepg. and quantitating lipoproteins by HPLC)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(very-low-d.; method for sepg. and quantitating lipoproteins by HPLC)

IT 306-08-1, Homovanillic acid 9003-99-0, Peroxidase **9026-00-0**, Esterase, **cholesterol 9028-76-6**, Oxidase, **cholesterol**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for sepg. and quantitating lipoproteins by HPLC)

IT 79-41-4D, Methacrylic acid, ester crosslinked copolymer
RL: DEV (Device component use); USES (Uses)
(method for sepg. and quantitating lipoproteins by HPLC)

L50 ANSWER 7 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:688470 HCAPLUS
DN 133:263553
TI Enzumic method for selectively quantitating **cholesterol**
IN Yamamoto, Mitsuaki; Takahashi, Yoko; Taniguchi, Yuriko; Odawara, Shoko;

Nakanishi, Kazuo; Nakamura, Mitsuhiro; Hino, Koichi
PA Daiichi Pure Chemicals Co., Ltd., Japan
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM G01N033-92
CC **9-16** (**Biochemical Methods**)
Section cross-reference(s): 7
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000057191	A1	20000928	WO 2000-JP1663	20000317

W: AU, CA, CN, JP, KR, MX, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRAI JP 1999-80503 A 19990324
AB An enzymic method is provided for selectively and efficiently quantitating **cholesterol** contained in a specific lipoprotein fraction to be measured with a small quantity of sample by a simple operation. The **cholesterol** contained in the specific lipoprotein fraction (e.g., HDL) is quantitated in the presence of a compd. having a relatively strong affinity for the other lipoproteins (e.g., LDL, VLDL) not to be measured, a **surfactant** acting relatively strongly on the specific lipoprotein, and a **cholesterol** reagent. The compd. having a relatively strong affinity for the lipoproteins not to be measured is selected from a group of saponin (e.g., digitonin, tomatin), polyene antibiotics (nystatin, pimaricin, peptamycin, trichomycin, fungichromin, perimycin, amphotericin, etruscomycin, primycin, candidine), **cholesterol** deriv., peptide (bacitracin, polymyxin, suzukacillin, gramicidin), lectin (Con A, castor oil plant lectin, peanut lectin) and phospholipid deriv. A quantification reagent used in this method is claimed. An excellent correlation was obsd. between the HDL content in a **blood** sample measured by this method and one measured by the conventional pptn. method.
ST **cholesterol** quantitation lipoprotein HDL saponin **surfactant**; polyene antibiotics peptide lectin phospholipid **cholesterol**
IT Polyenes
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(antibiotics; method for selectively quantitating **cholesterol**)
IT Agglutinins and Lectins
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(castor oil plant; peanut; method for selectively quantitating **cholesterol**)
IT Phospholipids, analysis
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(deriv.; method for selectively quantitating **cholesterol**)
IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(high-d.; method for selectively quantitating **cholesterol**)
IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(low-d.; method for selectively quantitating **cholesterol**)
IT **Blood analysis**
Surfactants
(method for selectively quantitating **cholesterol**)
IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(method for selectively quantitating **cholesterol**)
IT Agglutinins and Lectins

Peptides, analysis
Saponins
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for selectively quantitating **cholesterol**)
IT **Apolipoproteins**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(method for selectively quantitating **cholesterol**)
IT Antibiotics
(polyene; method for selectively quantitating **cholesterol**)
IT **Lipoproteins**
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(very-low-d.; method for selectively quantitating **cholesterol**)
IT 9057-02-7, Pullulan
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Chol-AECM; method for selectively quantitating **cholesterol**)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(enzymic anal.; method for selectively quantitating **cholesterol**)
IT 83-07-8, 4-Aminoantipyrine 9003-99-0, Peroxidase **9026-00-0, Cholesterol esterase 9028-76-6, Cholesterol oxidase** 127544-88-1
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for selectively quantitating **cholesterol**)
IT **57-88-5D, Cholesterol**, deriv. 1394-02-1, Trichomycin 1400-61-9, Nystatin 1405-87-4, Bacitracin 1405-90-9, Candidine 1405-97-6, Gramicidin 1406-11-7, Polymixin 6834-98-6, Pentamycin 7681-93-8, Pimaricin 9002-93-1, Triton X-100 11016-07-2, Perimycin 11017-50-8, Suzukacillin 11024-24-1, Digitonin 11028-71-0, Concanavalin A 12633-72-6, Amphotericin 13058-67-8, Etruscomycin 17406-45-0 113441-12-6, Primycin 142174-65-0, Emulgen B 66 185463-23-4, Dipalmitoyl-L-.alpha.-phosphatidylglycerol
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for selectively quantitating **cholesterol**)
RE.CNT 9
RE
(1) Denka Seiken Co Ltd; EP 887422 A HCAPLUS
(2) Denka Seiken Co Ltd; WO 9826090 A1 1998 HCAPLUS
(3) Iatron Lab Inc; JP 09121895 A 1997 HCAPLUS
(4) Iatron Lab Inc; JP 119300 A 1999
(5) Kyowa Medetsukusu K K; EP 698791 A HCAPLUS
(6) Kyowa Medetsukusu K K; JP 07301636 A 1995 HCAPLUS
(7) Wako Pure Chemical Industries Ltd; EP 878716 A HCAPLUS
(8) Wako Pure Chemical Industries Ltd; JP 996637 A 1997
(9) Wako Pure Chemical Industries Ltd; JP 10311833 A 1998 HCAPLUS

L50 ANSWER 8 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:628377 HCAPLUS
DN 133:190189
TI Enzymic method for quantitating specific lipoprotein
IN **Kishi, Koji; Kakuyama, Tsutomu; Ochiai, Koji ; Hasegawa, Yuzo**
PA **International Reagents Corp., Japan**
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM G01N033-92
ICS C12Q001-44
CC **9-2 (Biochemical Methods)**
Section cross-reference(s): 7
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	WO 2000052480	A1	20000908	WO 2000-JP1172	20000229 <--
	W: CA, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1158299	A1	20011128	EP 2000-905409	20000229 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1999-53330	A	19990301		
	WO 2000-JP1172	W	20000229 <--		

AB An enzymic method is provided for quantitating a specific component (e.g., HDL (high-d. lipoprotein), LDL (low-d. lipoprotein), VLDL (very low-d. lipoprotein)) in lipoproteins contained in a biol. sample by using a commonly employed automated analyzer without performing centrifugation or making the reaction liq. cloudy due to the formation of complexes or aggregates. A control means (e.g, **ionic** strength, enzyme, **surfactant**) is introduced into the method so that the enzyme reaction can be carried out exclusively for the target component. For example, HDL was highly specifically quantitated using **lipoprotein lipase** (LPL) and **cholesterol esterase** (CE) from Chromobacterium viscosum in the presence of 100mM hydrazine and 0.6% **Nonion** K-230 (**nonionic surfactant** with HLB 17.3).

ST HDL LDL VLDL lipoprotein enzymic analysis; **lipoprotein lipase nonionic surfactant ionic** strength

IT **Nonion**
(K-230; A-10R; enzymic method for quantitating specific lipoprotein)

IT Analytical apparatus
(automated; enzymic method for quantitating specific lipoprotein)

IT Analysis
(enzymic anal.; enzymic method for quantitating specific lipoprotein)

IT **Blood analysis**
Chromobacterium viscosum
Hydrophile-lipophile balance value
Ionic strength
Surfactants
pH
(enzymic method for quantitating specific lipoprotein)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(enzymic method for quantitating specific lipoprotein)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(enzymic method for quantitating specific lipoprotein)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(high-d.; enzymic method for quantitating specific lipoprotein)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(low-d.; enzymic method for quantitating specific lipoprotein)

IT **Surfactants**
(**nonionic**; enzymic method for quantitating specific lipoprotein)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(very-low-d.; enzymic method for quantitating specific lipoprotein)

IT **9004-02-8, Lipoprotein lipase**
9026-00-0, Esterase, **cholesterol**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(enzymic method for quantitating specific lipoprotein)

IT 302-01-2, Hydrazine, analysis 9004-98-2, Brij97 **9028-76-6**,

Cholesterol oxidase 67775-34-2,
Cholesterol dehydrogenase
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(enzymic method for quantitating specific lipoprotein)

RE.CNT 13
RE
(1) Daiichi Pure Chem Co Ltd; AU 8750998 A
(2) Daiichi Pure Chem Co Ltd; WO 99010526 A
(3) Daiichi Pure Chem Co Ltd; JP 1156395 A 1999
(4) International Reagents Corp; JP 9299 A 1997
(5) Wako Pure Chemical Industries Ltd; US 5814472 A HCAPLUS
(6) Wako Pure Chemical Industries Ltd; US 5814472 A HCAPLUS
(7) Wako Pure Chemical Industries Ltd; US 5885788 A HCAPLUS
(8) Wako Pure Chemical Industries Ltd; EP 821239 A HCAPLUS
(9) Wako Pure Chemical Industries Ltd; EP 878716 A HCAPLUS
(10) Wako Pure Chemical Industries Ltd; EP 878716 A HCAPLUS
(11) Wako Pure Chemical Industries Ltd; JP 10311833 A 1998 HCAPLUS
(12) Wako Pure Chemical Industries Ltd; JP 1084997 A 1998
(13) Wako Pure Chemical Industries Ltd; JP 1130617 A 1999

L50 ANSWER 9 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:513825 HCAPLUS
DN 133:132105
TI A method for quantitating triglyceride in specific lipoprotein
IN Miyauchi, Kazuhito; Takada, Shizuyo; Murakami, Tomomi; Miike, Akira
PA Kyowa Medex Co., Ltd., Japan
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C12Q001-61
CC **9-2 (Biochemical Methods)**
Section cross-reference(s): 14
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000043537	A1	20000727	WO 2000-JP246	20000120
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1148142	A1	20011024	EP 2000-900833	20000120
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	JP 1999-12434	A	19990120		
	WO 2000-JP246	W	20000120		

AB A convenient method is provided for quantitating triglyceride (TG) in a specific lipoprotein (e.g., HDL, LDL) among various lipoproteins. The method is characterized by eliminating free glycerol from a sample contg. free glycerol and TG in the specific lipoprotein, treating the residue with **lipoprotein lipase** and an enzymic system which generates hydrogen peroxide from free glycerol, and then, quantitating the formed hydrogen peroxide. The detn. of TG in LDL contributes to the prevention of arteriosclerosis through obtaining an index for the prodn. of small, dense LDL.
ST triglyceride **lipoprotein lipase** glycerol oxidase peroxidase; HDL LDL triglyceride **surfactant** agglutination arteriosclerosis
IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Trinder's reagent; method for quantitating triglyceride in specific

lipoprotein)
IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(deriv.; alkylphenylether; method for quantitating triglyceride in specific lipoprotein)
IT **Lipoproteins**
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(high-d.; method for quantitating triglyceride in specific lipoprotein)
IT **Lipoproteins**
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(low-d., small, dense; method for quantitating triglyceride in specific lipoprotein)
IT **Lipoproteins**
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(low-d.; method for quantitating triglyceride in specific lipoprotein)
IT Agglutination
Arteriosclerosis
Blood analysis
Surfactants
(method for quantitating triglyceride in specific lipoprotein)
IT Glycerides, analysis
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(method for quantitating triglyceride in specific lipoprotein)
IT **Lipoproteins**
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(method for quantitating triglyceride in specific lipoprotein)
IT Anions
(polyvalent; method for quantitating triglyceride in specific lipoprotein)
IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(method for quantitating triglyceride in specific lipoprotein)
IT 56-81-5, Glycerol, analysis
RL: ANT (Analyte); RCT (Reactant); REM (Removal or disposal); ANST (Analytical study); PROC (Process)
(method for quantitating triglyceride in specific lipoprotein)
IT 83-07-8, 4-Aminoantipyrine 9003-99-0, Peroxidase **9004-02-8**, **Lipoprotein lipase** 9030-66-4, Glycerol kinase 9046-28-0, Glycerol-3-phosphate oxidase 69669-73-4, Glycerol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for quantitating triglyceride in specific lipoprotein)
IT 7487-88-9, Magnesium sulfate, analysis 9016-45-9, **Nonion** NS-230 10043-52-4, Calcium chloride, analysis 25322-68-3D, Polyoxyethyleneglycol, deriv.; alkylphenylether 58229-81-5, Triton DF-16 70563-27-8, Emulgen 709 142174-65-0, Emulgen B 66
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for quantitating triglyceride in specific lipoprotein)
RE.CNT 4
RE
(1) Iatron Lab Inc; JP 5847499 A 1983
(2) Iatron Lab Inc; JP 09121895 A 1997 HCAPLUS
(3) Toyobo Co Ltd; JP 5911197 A 1984
(4) Wako Pure Chemical Industries Ltd; JP 57137858 A 1982 HCAPLUS

L50 ANSWER 10 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:266876 HCAPLUS
DN 132:305464
TI A direct and selective enzymic method for quantitating **cholesterol** in each lipoprotein
IN Shinbo, Takao; Tadano, Toshio

PA T.T.K. Y. K., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS G01N033-92
CC **9-2** (**Biochemical Methods**)
Section cross-reference(s): 13
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000116400	A2	20000425	JP 1998-322772	19981009

AB A method is provided for directly and selectively quantitating **cholesterol** in each lipoprotein (chylomicron, HDL, LDL, or VLDL) in a test sample in the presence of phosphorus compd., **surfactant** and protein solubilizer without fractionating it even when each lipoprotein coexists in the sample. A selectivity is given to the reaction between each lipoprotein and an enzyme (e.g., **cholesterol esterase, cholesterol oxidase, cholesterol dehydrogenase**) by selecting an appropriate kind of phosphorus compd. (e.g., inorg. phosphoric acid, its salt, org. phosphate, org. phosphorus compd.) and the appropriate kind and concn. for **surfactant** (e.g., polyoxyethylene-polyoxypropylene copolymer, polyoxyethylene polymer, polyoxypropylene polymer) and protein solubilizer (e.g, anionic-, cationic-, **nonionic-surfactant**). The method is useful in quantitating **cholesterol** which is important in terms of lipid metab. in the field of clin. diagnosis. A good correlation was obsd. between the amts. of **cholesterol** in HDL or LDL in a **serum** sample measured by this method and by the centrifugation method.

ST **cholesterol** lipoprotein HDL LDL enzymic analysis

IT **Surfactants**
(anionic; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Surfactants**
(cationic; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(deriv.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Blood analysis**
Chylomicrons
Diagnosis
Surfactants
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT Phosphates, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT Analysis
(enzymic anal.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(high-d.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Lipoproteins**

RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(low-d.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT Lipids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metab.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Surfactants**
(**nonionic**; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(very-low-d.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT 7723-14-0, Phosphorus, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(compd.; direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

IT 7487-88-9, Magnesium sulfate, analysis 7558-79-4 7664-38-2, Phosphoric acid, analysis 7786-30-3, Magnesium chloride, analysis 9003-11-6, Polyoxyethylene-polyoxypropylene copolymer 9004-81-3, Polyoxyethylene monolaurate 25322-68-3D, deriv. 25322-69-4D, deriv. 31017-83-1, Polyoxyethylene laurylamine 71276-50-1, ..alpha..-Tocopherol phosphate 90940-45-7 128808-25-3 134499-53-9 265096-08-0, .beta.-Glucan phosphate disodium
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(direct and selective method enzymic for quantitating **cholesterol** in each lipoprotein)

L50 ANSWER 11 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:210423 HCAPLUS
DN 132:233997
TI Methods and reagents for the fractional quantitation of **cholesterols** in lipoproteins
IN Sugiuchi, Hiroyuki
PA Kyowa Medex Co., Ltd., Japan
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS C12Q001-44; C12Q001-26
CC **9-16** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000017388	A1	20000330	WO 1999-JP4128	19990730
	W: AU, BG, BR, CA, CN, CZ, HU, ID, IL, IN, JP, KR, MX, NO, NZ, PL, RO, SG, SI, SK, UA, US, VN, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9949320	A1	20000410	AU 1999-49320	19990730
	EP 1114870	A1	20010711	EP 1999-933203	19990730
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, FI
PRAI JP 1998-264367 A 19980918
WO 1999-JP4128 W 19990730
AB A method is provided for the fractional quantitation of **cholesterols** in low d. lipoproteins (LDL) by measuring hydrogen peroxide or reduced-type coenzyme generated upon the reactions of **cholesterol esterase** and **cholesterol oxidase** or **cholesterol dehydrogenase** in the presence of a reagent which allows these enzymes to react only with **cholesterols** in LDL. The reagent used for the fractional quantitation of **cholesterols** in LDL contains at least polyoxyethylene deriv. (e.g., polyoxyethylene alkylether, polyoxyethylene alkylarylether) and polyoxyethylene-polyoxypropylene copolymer. A method and a reagent kit are provided for the continuous fractional quantitation of **cholesterols** in high d. lipoproteins (HDL) and **cholesterols** in LDL by the first chlorestrol reaction in the presence of a reagent which allows these enzymes to react only with **cholesterols** in HDL, and by the second chlorestrol reaction in the presence of the reagent which allows these enzymes to react only with **cholesterols** in LDL. The reagent used for the fractional quantitation of **cholesterols** in HDL consists of divalent metal salt and heparin, its salt, phosphotungstic acid, its salt, polyethyleneglycol, sulfated oligosaccharide or its salt, and causes agglutination with lipoproteins other than HDL. A method and a reagent kit are also provided for the continuous fractional quantitation of **cholesterols** in HDL and total **cholesterol** by the first chlorestrol reaction in the presence of the reagent which allows these enzymes to react only with **cholesterols** in HDL, and by the second chlorestrol reaction in the presence of a reagent which allows these enzymes to react with **cholesterols** in all lipoproteins. The reagent used for the quantitation of **cholesterol** in all lipoproteins contains a **surfactant** capable of dissolving all lipoproteins.
ST fractional quantitation **cholesterol** lipoprotein HDL LDL
IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(derivs.; alkylether; alkylarylether; methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(high-d.; methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(low-d.; methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT Agglutination
Blood analysis
Surfactants
Test kits
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT **Lipoproteins**
RL: AMX (Analytical matrix); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT Oligosaccharides, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(sulfated; methods and reagents for fractional quantitation of

cholesterol in lipoproteins)
IT 106392-12-5, Pluronic 121
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Pluronic L-101; Pluronic L-121; Pluronic L-122; Pluronic P-103; Pluronic F-108; methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT **9026-00-0**, Esterase, **cholesterol 9028-76-6, Cholesterol oxidase 67775-34-2, Cholesterol dehydrogenase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
IT 7487-88-9, Magnesium sulfate, analysis 9002-93-1, Triton X-100 9003-11-6, Polyoxyethylene-polyoxypropylene copolymer 9005-49-6, Heparin, analysis 9016-45-9, Emulgen 911 9036-19-5, **Nonion** HS-210 9042-14-2, Dextran sulfate 10043-52-4, Calcium chloride, analysis 12501-23-4 25322-68-3, Polyethyleneglycol 25322-68-3D, derivs.; alkylether; alkylarylether 51312-27-7, Emulgen L-40 142174-65-0, Emulgen B 66
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(methods and reagents for fractional quantitation of **cholesterol** in lipoproteins)
RE.CNT 6
RE
(1) International Reagents Corp; JP 06242110 A 1994 HCAPLUS
(2) Kyowa Medex Co Ltd; US 5691159 A HCAPLUS
(3) Kyowa Medex Co Ltd; EP 699767 A1 HCAPLUS
(4) Kyowa Medex Co Ltd; WO 9524502 A1 HCAPLUS
(5) Kyowa Medex Co Ltd; JP 08131197 A 1996 HCAPLUS
(6) Sugiuchi, H; Clin, Chem 1998, V44(3), P522 HCAPLUS

L50 ANSWER 12 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:32432 HCAPLUS
DN 132:61287
TI A method and a kit for measuring lipoprotein A-I **cholesterol**
IN Itakura, Hiroshige; Kondo, Kazuo; Kido, Toshimi; Ishizuka, Masahiro
PA Cosmo Sogo Kenkyusho K. K., Japan; Cosmo Oil Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-53
ICS G01N033-531; G01N033-92; G01N033-561
CC **9-10** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000009730	A2	20000114	JP 1998-173433	19980619

AB A simple method is described for accurately measuring a **cholesterol** quantity in lipoprotein A-1 present in **blood serum** or **plasma** with a min. person-to-person difference in measurement values. A **surfactant** and anti-human apolipoprotein A-II antibody are added to a **blood** sample, and the resulting insol. material is removed by centrifugation. Then, the **cholesterol** quantity in the supernatant is measured by the conventional method using **cholesterol esterase**, **cholesterol oxidase** and peroxidase. The anti-human apolipoprotein A-II antibody is raised in sheep, goat or rabbit, and is used as a form of anti-apolipoprotein A-II **serum**, fat-removed anti-apolipoprotein A-II **serum**, or purified anti-apolipoprotein A-II antibody. A test kit for measuring lipoprotein A-I **cholesterol** comprises at least a vial contg. anti-human

apolipoprotein A-II antibody, a vial contg. a **surfactant**, and a vial contg. the reagents for measuring **cholesterol**. A good correlation was obsd. between lipoprotein A-I **cholesterol** values measured by this method and lipoprotein A-I values measured by rocket immunoelectrophoresis method.

ST **cholesterol** lipoprotein AI apolipoprotein AII antibody

IT **Apolipoproteins**
RL: BUU (Biological use, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(A-II; method and kit for measuring lipoprotein A-I **cholesterol**)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(high-d., apolipoprotein A-I-contg.; method and kit for measuring lipoprotein A-I **cholesterol**)

IT **Lipoproteins**
RL: BUU (Biological use, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(high-d.; method and kit for measuring lipoprotein A-I **cholesterol**)

IT **Blood analysis**
Goat
Rabbit
Sheep
Surfactants
Test kits
(method and kit for measuring lipoprotein A-I **cholesterol**)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and kit for measuring lipoprotein A-I **cholesterol**)

IT Immunoassay
(rocket immunoelectrophoresis; method and kit for measuring lipoprotein A-I **cholesterol**)

IT Antibodies
RL: ARU (Analytical role, unclassified); BPN (Biosynthetic preparation); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(to apolipoprotein A-II; method and kit for measuring lipoprotein A-I **cholesterol**)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(lipoprotein A-I; method and kit for measuring lipoprotein A-I **cholesterol**)

IT 83-07-8, 4-Aminoantipyrine 9003-99-0, Peroxidase **9026-00-0**, Esterase, **cholesterol 9028-76-6**, Oxidase, **cholesterol**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and kit for measuring lipoprotein A-I **cholesterol**)

IT 25322-68-3, Polyethylene glycol
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and kit for measuring lipoprotein A-I **cholesterol**)

L50 ANSWER 13 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:814622 HCAPLUS
DN 132:47230
TI An elution liquid for the quantitative separation and analysis of **serum** lipoproteins in gel-permeation chromatography
IN Kitamura, Takashi
PA Tosoh Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N030-26
ICS G01N030-48; G01N030-88; G01N033-48
CC **9-3 (Biochemical Methods)**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11352119	A2	19991224	JP 1998-155733	19980604

AB An improved method excellent in speed and recovery is provided for sepg. and analyzing **serum** lipoproteins in high-performance gel-permeation chromatog. by avoiding the drop in recovery due to the hydrophobic adsorption of lipoproteins to the column filler. As an elution liq. for sepg. and analyzing **serum** lipoproteins on gel filtration, a buffer (pH 6.0-9.0) contg. the salt of monovalent chaotropic anion and/or the **non-ionic surfactant** with 9-16 HLB is used. **Cholesterols** in lipoproteins isolated by the chromatog. are colorimetrically detd. using a combination of enzymes and a quinone coloring dye. A significantly improved recovery of **serum** lipoproteins on gel filtration was obtained by using an elution buffer contg. sodium acetate, or sodium acetate and Emulgen 910.

ST gel permeation chromatog lipoprotein chaotropic anion; hydrophilicity hydrophobicity **nonionic surfactant** adsorption chromatog

IT Anions
(chaotropic anions; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Blood analysis**
Colorimetry
Dyes
High-performance gel-permeation chromatography
Hydrophile-lipophile balance value
Hydrophobicity
pH
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Lipoproteins**
RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT Enzymes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Lipoproteins**
RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(high-d.; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Lipoproteins**
RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(low-d.; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Surfactants**
(**nonionic**; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT Adsorption
(protein; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **Lipoproteins**
RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(very-low-d.; elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT 83-07-8, 4-Aminoantipyrine 9003-99-0, Peroxidase **9026-00-0,**

Cholesterol esterase 9028-76-6, **Cholesterol oxidase** 9029-44-1, Ascorbate oxidase 88795-34-0, N-Ethyl-N-(3-sulfopropyl)-m-anisidine 163729-62-2, N-Ethyl-N-(3-methylphenyl)-N'-succinylethylenediamine
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

IT 106-51-4D, Quinone, derivs. 127-09-3, Acetic acid, sodium salt 9016-45-9, Emulgen 910
RL: NUU (Other use, unclassified); USES (Uses)
(elution liq. for quant. sepn. and anal. of **serum** lipoproteins in gel-permeation chromatog.)

L50 ANSWER 14 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:450865 HCAPLUS
DN 131:99518
TI Polyanion and amphoteric **surfactant** in optical method for measuring LDL-**cholesterol**
IN Miki, Yutaka; Koyama, Isao; Imajo, Nobuko; Futatsugi, Masayuki; Hanada, Toshiro
PA Wako Pure Chemical Industries, Ltd., Japan
SO U.S., 28 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-60
ICS C12Q001-32; C12Q001-00
NCL 435011000
CC **9-5** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5925534	A	19990720	US 1998-128930	19980805
	EP 964249	A2	19991215	EP 1998-306312	19980806
	EP 964249	A3	20000426		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	KR 2000004844	A	20000125	KR 1998-32739	19980812
	JP 2000060600	A2	20000229	JP 1999-67854	19990315
PRAI	JP 1998-175396	A	19980608		

AB The amt. of **cholesterol** in low d. lipoproteins in a sample can be measured by contacting the sample with one or more reagent solns. to carry out the reaction in the presence of a polyanion and an amphoteric **surfactant**, followed by optical measurement of the reaction product. The amt. of LDL-**cholesterol** in **serum** was measured using a Hitachi 7170 Autoanalyzer. LEBON LAG40 was the amphoteric **surfactant** and heparin was the polyanion used.

ST LDL **cholesterol** detn polyanion amphoteric **surfactant**; heparin Lebon LAG40 LDL **cholesterol serum**

IT Betaines
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(alkyl, as **surfactant**; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Surfactants**
(amphoteric; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Surfactants**
(anionic; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Amine oxides
Amino acids, analysis
Sulfobetaines
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(as **surfactant**; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Dyes

(formation of; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Betaines
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(imidazolium derivs., as **surfactant**; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(low-d., **cholesterol** in; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Surfactants**
(**nonionic**; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Lipoproteins**
RL: REM (Removal or disposal); PROC (Process)
(other than LDL, antibody to; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Colorimetric indicators
(oxidizable color producing reagent, reagent soln. contg.; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **Blood analysis**
Spectroscopy
Test kits
(polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Anions
(polyvalent; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Oligosaccharides, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(sulfated, as polyanion; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT Antibodies
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(to lipoproteins other than LDL; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT 9003-05-8D, Polyacrylamide, carboxymethylated and/or sulfated 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, analysis 9007-28-7, Chondroitin sulfate 9042-14-2, Dextran sulfate 9050-30-0, Heparan sulfate 12067-99-1, Phosphotungstic acid 134195-17-8
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(as polyanion; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT 683-10-3, Lauryl betaine 4292-10-8 6843-97-6, LEBON 15 11140-78-6, AMOGEN K 28299-33-4D, Imidazoline, derivs. 36574-66-0D, N-cocoacyl derivs. 54661-66-4D, N-Carboxyethyl-N-hydroxyethyl imidazolinium betaine, 2-alkyl derivs. 59149-04-1D, N-Carboxymethyl-N-hydroxyethyl imidazolinium betaine, 2-alkyl derivs. 91301-74-5, LEBON 50 129290-77-3, CLINK PA-12 143711-41-5, SALABON 50 172451-43-3, LEBON LAG40 186777-33-3, ENAGICOL C40H
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(as **surfactant**; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT 53-57-6, NADPH 58-68-4, NADH
RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
(formation of; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT **57-88-5**, **Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(in LDL; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

IT 53-59-8, NADP 53-84-9, NAD 9001-05-2, Catalase 9001-05-2D, Catalase, inhibitors 9003-99-0, Peroxidase **9026-00-0**,

Cholesterol esterase 9028-76-6,
Cholesterol oxidase 9028-76-6D,
Cholesterol oxidase, inhibitors **67775-34-2,**
Cholesterol dehydrogenase 67775-34-2D,
Cholesterol dehydrogenase, inhibitors
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reagent soln. contg.; polyanion and amphoteric **surfactant** in optical detn. of LDL-**cholesterol**)

RE.CNT 1
RE
(1) Miki; US 5814472 1998 HCAPLUS

L50 ANSWER 15 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:420933 HCAPLUS
DN 131:41803
TI Methods for lipoprotein separation and its determination.
IN Haginaka, Atsushi; Yamaguchi, Masaru; Takayanagi, Hiroaki; Adachi, Tadashi
PA Mitsubishi Chemical Industries Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07K001-18
ICS B01D015-08; B01J020-26; C07K014-47; G01N030-48
CC **9-3** (**Biochemical Methods**)
Section cross-reference(s): 14

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11180996	A2	19990706	JP 1997-346139	19971216

AB A chromatog. method is described for sepg. lipoproteins with high accuracy within a short time. The chromatog. sepn. is carried out by making lipoprotein-contg. soln. contact with **ion**-exchange resin possessing functional groups only on hydrophilic polymer layer coating the porous particles, and by eluting lipoproteins with elution buffer. Examples are shown by sepg. HDL, LDL and VLDL in several mammalian **serum** samples on anion-exchange resin possessing diethylaminoethyl groups on hydrophilic polymer layer coating the particles made of cross-linked copolymer of methacrylic acid ester. Sepd. lipoproteins are fluorometrically detd. by using the enzyme soln. contg. **cholesterol** ester hydrolase, **cholesterol oxidase**, peroxidase and homovanillic acid.
ST lipoprotein anion exchange chromatog fluorometry detn; **cholesterol** HDL LDL VLDL chromatog sepn
IT Anion exchangers
(DEAE-; methods for lipoprotein sepn. and detn.)
IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high-d.; methods for lipoprotein sepn. and detn.)
IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(low-d.; methods for lipoprotein sepn. and detn.)
IT Anion exchange liquid chromatography
Blood analysis
Diagnosis
Fluorometry
Ion exchange liquid chromatography
Ion exchangers
Separation
(methods for lipoprotein sepn. and detn.)
IT **Lipoproteins**

RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(methods for lipoprotein sepn. and detn.)

IT **Lipoproteins**
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(very-low-d.; methods for lipoprotein sepn. and detn.)

IT 79-41-4D, Methacrylic acid, esters , polymers
RL: NUU (Other use, unclassified); USES (Uses)
(cross-linked; methods for lipoprotein sepn. and detn.)

IT **57-88-5, Cholesterol,** analysis
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(methods for lipoprotein sepn. and detn.)

IT 306-08-1, Benzeneacetic acid, 4-hydroxy-3-methoxy- 9003-99-0, Peroxidase **9026-00-0**, Esterase, **cholesterol 9028-76-6**, Oxidase, **cholesterol**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods for lipoprotein sepn. and detn.)

L50 ANSWER 16 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:416835 HCAPLUS
DN 131:181776
TI Direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**
AU Gedik, Nursal; Gultepe, Mustafa; Avsar, Kadir; Demirci, Mustafa
CS GATA Haydarpasa Egitim Hastanesi, Biyokimya Anabilim Dali, Istanbul, 81327, Turk.
SO Biyokim. Derg. (1998), 23(1), 10-17
CODEN: BIDEDV; ISSN: 0250-4685
PB Biyokimya Dergisi
DT Journal
LA Turkish
CC **9-2** (**Biochemical Methods**)
Section cross-reference(s): 14
AB We have automated in our lab. conditions, the method that has been developed for measuring HDL-**cholesterol** in **serum** without any pretreatment, using Polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin. Polyethylene glycol-modified enzymes **cholesterol esterase** (PEG-CHER) and **cholesterol oxidase** (PEG-CHOD) showed selective catalytic activities towards lipoprotein fractions (LDL<VLDL chylomicron<HDL). In the presence of Mg+2 **ions** and dextran sulfate, a combination of polyethylene glycol-modified enzymes with .alpha.-cyclodextrin sulfate reduced the reactivity of **cholesterol** esp. in chylomicron and VLDL, thus provided a way to det. HDL-**cholesterol** levels in **sera** without the need for pptn. of those lipoprotein fractions. When the results of our assays were compared to those of an ultracentrifugation and a sodium phosphotungstate pptn. method for the **serum** samples of healthy, lipemic and icteric individuals, the obsd. correlations were excellent (r = 0.995 and 0.994 resp.).
ST HDL **cholesterol serum**; polyethylene glycol enzyme esterase oxidase
IT **Blood analysis**
Chylomicrons
Jaundice
(direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **Lipoproteins**
RL: ANT (Analyte); ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high-d.; direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT Lipids, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(hyperlipidemia; direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **Lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(low-d.; direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(very-low-d.; direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **57-88-5**, Cholest-5-en-3-ol (3.beta.)-, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**blood**; direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT **9026-00-0**, **Cholesterol esterase**
9028-76-6, **Cholesterol oxidase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

IT 9042-14-2, Dextran sulfate 22537-22-0, Mg+2, analysis 120366-24-7, .alpha.-Cyclodextrin sulfate
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(direct measurement of HDL **cholesterol** in **serum** with polyethylene glycol-modified enzymes **cholesterol esterase** and **cholesterol oxidase**)

L50 ANSWER 17 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:378136 HCAPLUS
DN 131:56137
TI Method and reagent kits for determination of lipoprotein **cholesterol**
IN **Kishi, Koji**; **Kakuyama, Tsutomu**; Shirahase, Yasushi; Watadzu, Yoshifumi
PA **International Reagents Corp., Japan**
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-32
ICS C12Q001-26; C12Q001-60; G01N033-92
CC 9-5 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 11155595 A2 19990615 JP 1997-325023 19971126

AB **Cholesterol** (I) of a target lipoprotein is detd. in biol. samples contg. non-target lipoproteins by (1) treating I of non-target lipoproteins with **cholesterol oxidase**, (2) measuring light absorbance, (3) treating I of the target lipoprotein with **cholesterol dehydrogenase**, (4) measuring light absorbance, and (5) detg. the difference between the former absorbance and the latter. The enzyme treatment is carried out in the presence of compds. forming water-sol. complexes with I to prevent formation of aggregates.

ST lipoprotein **cholesterol** detn kit enzyme; oxidase dehydrogenase **cholesterol** lipoprotein detn

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggregation inhibitor; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT Metacyclophanes
Polysaccharides, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggregation inhibitors; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT Polyelectrolytes
(anionic, aggregation inhibitors; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(high-d.; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(low-d.; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **Blood analysis**
Test kits
(method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(remnant-like; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(very-low-d.; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT Polymers, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(water-sol., aggregation inhibitors; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT 9003-01-4, Poly(acrylic acid) 9005-38-3, Sodium alginate 9011-18-1, Dextran sodium sulfate 9041-08-1, Heparin sodium salt 9064-57-7, .lambda.-Carrageenan 11028-71-0, Concanavalin A 17465-86-0D, .gamma.-Cyclodextrin, 2-hydroxypropyl derivs. 25322-68-3 51166-71-3, 2,6-Dimethyl-.beta.-cyclodextrin 51312-42-6, Sodium phosphotungstate 228396-37-0 228396-38-1 228396-39-2
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggregation inhibitor; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **57-88-5**, Cholest-5-en-3-ol (3.beta.)-, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**blood**; method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

IT **9028-76-6, Cholesterol oxidase**
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent kits for detn. of lipoprotein **cholesterol** with **cholesterol oxidase** and dehydrogenase)

L50 ANSWER 18 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:191608 HCAPLUS
DN 131:41640
TI New homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol dehydrogenase**.
AU **Kishi, Koji**; Kakuyama, Tutomu; Ikeda, Masafumi; Watazu, Yoshifumi; Nasu, Masato; Kayamori, Yuzo; Katayama, Yoshiaki; Nakamura, Masakazu
CS **Int. Reagent Corp., Kobe, 651-2241, Japan**
SO Seibutsu Shiryo Bunseki (1998), 21(5), 385-392
CODEN: SSBUEL; ISSN: 0913-3763
PB Seibutsu Shiryo Bunseki Kagakkai
DT Journal
LA Japanese
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 14
AB We have found that 4-sulfonyl calixarene transforms lipoproteins in human **serum** including very low d. lipoproteins (VLDL), low d. lipoproteins (LDL) and high d. lipoproteins (HDL) into sol. complexes, and that the reactivity of each sol. lipoprotein complex type with **cholesterol** hydrolase is different. Based on these exptl. results, we have developed a homogeneous LDL-**cholesterol** assay method by using both **cholesterol dehydrogenase** (CDH) from Nocardia sp. and **cholesterol esterase** (CE) from Chromobacterium viscosum. The performance of this new method, CE-CDH reaction system, is as follows: reproducibility is 0.44-0.6% (n = 20); assay response is linear up to 400 mg/dL (6.89 mmol/l); and reduced substances (bilirubin, etc.) do not interfere with the assay. The correlation between our new LDL-**cholesterol** assay method (y) and beta quantification method (x) by Osaka Medical Center for Cancer & Cardiovascular Disease (OMC) with fresh human **serum** (n = 50) is y = 0.955x + 2.77 (mg/dL), r = 0.992. We conclude that the new method is easily applicable to automated analyzers and is able to meet the requirement for accurate and precise routine anal. of LDL-**cholesterol** as a diagnostic marker for arteriosclerosis in clin. labs.
ST homogeneous assay **serum** LDL **cholesterol dehydrogenase**
IT Metacyclophanes
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(4-sulfonyl; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol dehydrogenase**)
IT Analysis
(enzymic anal.; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol dehydrogenase**)
IT **Lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(high-d.; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol**

dehydrogenase)
IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(low-d.; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)
IT Arteriosclerosis
Blood analysis
Diagnosis
(new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)
IT **Lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(very-low-d.; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(LDL-; new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)
IT **9028-76-6 67775-34-2**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)
IT **9026-00-0**
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(new homogeneous assay method for **serum** LDL-**cholesterol** by using **cholesterol** **dehydrogenase**)

L50 ANSWER 19 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:141955 HCAPLUS
DN 130:220163
TI Enzymic determination of HDL **cholesterol** and kits therefor
IN Nakanishi, Kazuo; Nakamura, Mitsuhiro; Hino, Koichi; Manabe, Mitsuhisa
PA Daiichi Kagaku Yakuhin K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-44
ICS C12Q001-26; C12Q001-60; G01N033-92
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11056395	A2	19990302	JP 1997-244821	19970827
	WO 9910526	A1	19990304	WO 1998-JP3771	19980825
	W: AU, CA, CN, KR, MX, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9887509	A1	19990316	AU 1998-87509	19980825
	EP 1046716	A1	20001025	EP 1998-938983	19980825
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1997-244821	A	19970827		
	WO 1998-JP3771	W	19980825		

AB HDL **cholesterol** (I) is detd. by (1) adding polyoxyethylene alkylenephenyl ethers and/or polyoxyethylene alkylenetribenzylphenyl ethers, enzyme reagents for detn. of I, and optionally inhibitors against

reaction between I in the **serum** lipoproteins and the enzyme reagents to a **serum** sample and (2) measuring I within a time when I of HDL is preferentially reacted with the enzyme reagents. The kits comprise (a) the **surfactants**, (b) enzyme reagents for detn. of I, and optionally (c) the above reaction inhibitors. This method eliminates the need for pretreatment such as centrifugation for pptg. lipoproteins other than HDL. A reagent contg. Emulgen B 66, **cholesterol esterase**, **cholesterol oxidase**, peroxidase, disulfobutyl-m-toluidine, 4-aminoantipyrine, and a MES buffer was added to **serum** samples 5 min after addn. of a MES buffer, and absorption at 600 nm was measured just before and 5 min after addn. of the reagent. The result well correlated with that measured by the pptn. method.

ST **cholesterol** HDL detn polyoxyalkyelne aryl ether

IT **Blood analysis**
Clinical analysis
Test kits
(enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT **High-density lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT Anionic polyelectrolytes
Divalent cations
Surfactants
(inhibitors for reaction between **serum** lipoprotein **cholesterol** and reagents; enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(monoaryl ethers; enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT 25322-68-3D, Polyethylene glycol, monoaryl ethers 37370-20-0, Emulgen A 60 142174-65-0, Emulgen B 66
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

IT 7786-30-3, Magnesium chloride, analysis 51312-42-6, Sodium phosphotungstate 106392-12-5, Pluronic F 88
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(inhibitor for reaction between **serum** lipoprotein **cholesterol** and reagents; enzymic detn. of HDL **cholesterol** using **surfactants** for preferential reaction between HCL **cholesterol** and enzymes)

L50 ANSWER 20 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:27957 HCAPLUS
DN 130:92454
TI A method and reagent for assaying a substance contained in a component of

biological sample.
IN **Kishi, Koji; Kakuyama, Tsutomu**; Shirahase, Yasushi; Watazu, Yoshifumi
PA **International Reagents Corporation, Japan**
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS G01N033-536; G01N033-92
CC 9-2 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9859068	A1	19981230	WO 1998-JP2795	19980622
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1020532	A1	20000719	EP 1998-928635	19980622
	R: DE, ES, FR, GB				
	US 6114134	A	20000905	US 1999-453474	19991202
PRAI	JP 1997-169281	A	19970625		
	WO 1998-JP2795	W	19980622		

AB A method is described for assaying a substance contained in a component of biol. sample using one or more calixarenes. The method utilizes the property of calixarenes of forming complexes with certain components (e.g. low-d. lipoprotein (LDL) and very low-d. lipoprotein (VLDL)) of biol. sample and suppressing the liberation of a substance (e.g. **cholesterol**) contained in the components. Then, it is allowed to assay a substance contained in another component (e.g., **cholesterol** in high-d. lipoprotein (HDL)), using specific enzymes (e.g. **cholesterol esterase** and **cholesterol dehydrogenase**), without preliminary sepg. the component from the other components of the sample. The method can be conducted by simple operations and lessens assay errors or human-made problems. It can be applied to the continuous measurement with general-purpose automatic analyzer and multichannel assay tied with other test items. The reagent contg. one or more calixarenes for this method is also claimed. Calixarene compds. contg. sulfates, carboxylates, amines and acetates were used.

ST calixarene LDL VLDL HDL **cholesterol** assay
IT Analytical apparatus
(automated; method and reagent for assaying substance contained in component of biol. sample)
IT Analysis
(enzymic anal.; method and reagent for assaying substance contained in component of biol. sample)
IT **Blood analysis**
UV and visible spectroscopy
(method and reagent for assaying substance contained in component of biol. sample)
IT **High-density lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)
IT **Low-density lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)
IT Metacyclophanes
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)
IT **Very low-density lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)

IT **Very low-density lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(remnants; method and reagent for assaying substance contained in component of biol. sample)
IT **57-88-5, Cholesterol,** analysis
RL: ANT (Analyte); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)
IT **9004-02-8, Lipoprotein lipase**
9026-00-0, Cholesterol esterase
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method and reagent for assaying substance contained in component of biol. sample)
IT 281-54-9, Calix(4) arene 281-54-9D, Calix(4)arene, derivs. 82040-66-2, Calix(8) arene 82040-66-2D, Calix(8) arene, derivs. 96627-08-6, Calix(6) arene 96627-08-6D, Calix(6) arene, derivs.
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method and reagent for assaying substance contained in component of biol. sample)
RE.CNT 16
RE
(1) Commissariat A L'Energie Atomique; FR 2698362 A HCAPLUS
(2) Commissariat A L'Energie Atomique; US 5607591 A HCAPLUS
(3) Commissariat A L'Energie Atomique; EP 670840 A HCAPLUS
(4) Commissariat A L'Energie Atomique; WO 9412502 A HCAPLUS
(5) Commissariat A L'Energie Atomique; JP 08503937 A 1996
(6) Genelabs Incorporated; WO 9403165 A HCAPLUS
(7) Genelabs Incorporated; US 5409959 A 1995 HCAPLUS
(8) International Reagents Corp; JP 06242110 A 1994 HCAPLUS
(9) Kyowa Medex Co Ltd; US 5691159 A HCAPLUS
(10) Kyowa Medex Co Ltd; EP 699767 A HCAPLUS
(11) Kyowa Medex Co Ltd; WO 9524502 A HCAPLUS
(12) Kyowa Medex Co Ltd; JP 08131197 A 1996 HCAPLUS
(13) The Flinders University Of South Australia; EP 286039 A HCAPLUS
(14) The Flinders University Of South Australia; WO 8808137 A HCAPLUS
(15) The Flinders University Of South Australia; AU 8815788 A HCAPLUS
(16) The Flinders University Of South Australia; JP 01503596 A 1989

L50 ANSWER 21 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1998:685043 HCAPLUS
DN 129:287545
TI Measuring device with electrodes fabricated on porous membrane substrate in whole
IN Cha, Geun-sig
PA Samduck International Corp., S. Korea
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N027-327
ICS G01N033-00
CC **9-1 (Biochemical Methods)**
Section cross-reference(s): 72, 79, 80
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9844342	A1	19981008	WO 1998-KR64	19980326
	W: CN, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6210907	B1	20010403	US 1999-381788	19990922
PRAI	KR 1997-11956	A	19970331		
	WO 1998-KR64	W	19980326		

AB The present invention relates to a measuring device which comprises electrodes fabricated on porous membrane substrate in which the sample

migrates chromatog.; and a method for quantifying material in the sample by using the device. The sample material can be quantified by the measuring device, which consists of pretreatment bands in the lower part of the porous membrane substrate and electrodes in the upper part of the pretreatment bands, by the procedure as follows: the sample material is chromatog. migrated in the porous membrane substrate by applying the sample on the lower part of the porous membrane substrate; the changes of the elec. signal at the electrode are measured to quantify the material. The analyzing method of this invention has merits: no addnl. prepn. of the sample is needed; a simple and quant. anal. of the material in short time; economical efficiency because of the dispensability of skilled personnel due to easy manipulation. Electrodes were fabricated on the upper part of nitrocellulose paper; then pretreatment bands such as HDL and VLDL antibody layer, Triton X-100 detergent layer, and **cholesterol esterase** and **cholesterol oxidase** enzyme layer, were successively fabricated on the lower part of the nitrocellulose paper. The sensor was used to quantify LDL **cholesterol** in **blood**.

ST electrode sensor chromatog porous membrane; LDL **cholesterol** **blood** electrode sensor nitrocellulose

IT **Blood cholesterol**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(LDL **cholesterol** detn. in **blood**; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT **High-density lipoproteins**
Very low-density lipoproteins
RL: REM (Removal or disposal); PROC (Process)
(antibodies to, in pretreatment bands; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Electrodes
(conductometric; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT **Low-density lipoproteins**
RL: ANT (Analyte); RCT (Reactant); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(detn. of, in **blood**; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Noble metals
Organometallic compounds
RL: DEV (Device component use); USES (Uses)
(electrodes contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(heavy metal oxides, electrodes contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Ceramics
(hydroscopic, porous membrane of; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Antibodies
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(interferents removal by pretreatment bands contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Amperometric electrodes
Analytical apparatus
Biochemical analysis
Blood analysis
Buffers
Chromatography
Electric insulators
Electrodes
Environmental analysis
Food analysis

Screen printing
Sensors
Surfactants
Urine analysis
(measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Heavy metals
RL: DEV (Device component use); USES (Uses)
(oxides, electrodes contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Filter paper
Paper
(porous membrane of; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Polymers, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(porous membrane of; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Membranes (nonbiological)
(porous; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Electrodes
(potentiometric; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Detergents
(pretreatment bands contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Enzymes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(pretreatment bands contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Industry
(sample, anal. of; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT Electrodes
(voltammetric; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 3317-67-7, Cobalt(II) phthalocyanine 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-22-4D, Silver, epoxy 7440-44-0, Carbon, uses 7440-57-5, Gold, uses 7783-90-6, Silver chloride, uses 11113-84-1, Ruthenium oxide
RL: DEV (Device component use); USES (Uses)
(electrodes contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT **57-88-5D, Cholesterol**, esters
RL: FMU (Formation, unclassified); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(hydrolysis of, in LDL detn. in **blood**; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); RCT (Reactant); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(in LDL detn. in **blood**; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 601-57-0, Cholest-4-en-3-one
RL: FMU (Formation, unclassified); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(in LDL detn. in **blood**; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 60-00-4, EDTA, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU

(Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(interferents removal by pretreatment bands contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT **57-88-5**, **Cholesterol**, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 9004-70-0, Nitrocellulose
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(porous membrane of; measuring device with electrodes fabricated on porous membrane substrate in whole)

IT 9002-93-1, Triton X-100 **9026-00-0**, **Cholesterol esterase 9028-76-6**, **Cholesterol oxidase**
RL: ARU (Analytical role, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(pretreatment bands contg.; measuring device with electrodes fabricated on porous membrane substrate in whole)

L50 ANSWER 22 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1998:406096 HCAPLUS
DN 129:65206
TI Method of determining **cholesterol** content of high-density lipoproteins
IN Matsui, Hiroshi; Ito, Yasuki; Ohara, Shuichi; Fujiwara, Akira
PA Denka Seiken Co., Ltd., Japan; Matsui, Hiroshi; Ito, Yasuki; Ohara, Shuichi; Fujiwara, Akira
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS G01N033-92
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9826090	A1	19980618	WO 1997-JP4442	19971204
	W: CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2246308	AA	19980618	CA 1997-2246308	19971204
	EP 887422	A1	19981230	EP 1997-946102	19971204
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001095600	A2	20010410	JP 2000-262726	19971204
	JP 2001103998	A2	20010417	JP 2000-262727	19971204
	JP 3164829	B2	20010514	JP 1998-526472	19971204
PRAI	JP 1996-344649	A	19961209		
	JP 1998-526472	A3	19971204		
	WO 1997-JP4442	W	19971204		

AB A method of detg. the **cholesterol** content of high-d. lipoprotein (HDL) is presented whereby the **cholesterol** content of HDL in a specimen contg. not only HDL but also other lipoproteins such as a low-d. lipoprotein (LDL), a very low-d. lipoprotein (VLDL) and chylomicron (CM) can be detd. selectively, readily, and accurately. The method comprises eliminating **cholesterol** of the lipoproteins other than HDL in the specimen and mixing the residue with a **surfactant** which specifically acts on HDL, and detg. enzymically the **cholesterol** content of HDL.

ST HDL detn **blood**

IT **Blood analysis**
(method of detg. **cholesterol** content of high-d. lipoproteins)
IT **High-density lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(method of detg. **cholesterol** content of high-d. lipoproteins)
IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method of detg. **cholesterol** content of high-d. lipoproteins by)

L50 ANSWER 23 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1998:229237 HCAPLUS
DN 128:280508
TI Direct determination of high-density lipoprotein- and total **cholesterol** in **serum** using a peroxidase-entrapped electrode and polyethylene glycol-modified enzymes
AU Kinoshita, Hideaki; Chijiwa, Takeo; Torimura, Masaki; Kano, Kenji; Ikeda, Tokuji
CS Fac. Lit., Kwassui, Women's Coll., Nagasaki, 850-0911, Japan
SO Bunseki Kagaku (1998), 47(4), 233-238
CODEN: BNSKAK; ISSN: 0525-1931
PB Nippon Bunseki Kagakkai
DT Journal
LA Japanese
CC **9-7** (**Biochemical Methods**)
AB The total concns. of lipoprotein (LP) **cholesterol** (CR) in **serum** were directly detd. by amperometric measurements of H2O2 generated by polyethylene glycol (PEG)-modified **cholesterol esterase** and **cholesterol oxidase** at a membrane-covered, peroxidase-entrapped, and ferrocene-embedded carbon-paste electrode. The concns. of LP aggregators, such as sodium dextran sulfate and MgCl2, and the amt. of the PEG-modified enzymes were optimized to det. the high-d. lipoprotein (HDL)-CR concn. The characteristics of the discrimination between HDL and other LPs by the PEG-modified enzymes and the aggregators are discussed. Using a **surfactant** as a solubilizer of LP aggregation, the HDL- and total CR concns. have been discriminatively detd. This method was applied to the detn. of the HDL-CR values of 17 human samples. The evaluated values were well correlated to those detd. by a com. spectrophotometric detn. kit using the PEG-modified enzymes and also by an amperometric detn. of the HDL-fraction prepd. by an ordinary pptn. method.
ST HDL **cholesterol** detn **serum** peroxidase electrode; lipoprotein **cholesterol** detn polyethylene glycol enzyme
IT **High-density lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(**cholesterol**; direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)
IT **Blood analysis**
Serum (blood)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)
IT **Blood cholesterol**
RL: ANT (Analyte); ANST (Analytical study)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)
IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)
IT Enzyme electrodes
(hydrogen peroxide-selective, ferrocene-embedded carbon-paste; direct

detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT 102-54-5, Ferrocene
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(carbon paste electrode contg.; direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT **57-88-5, Cholesterol,** analysis 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT 9003-99-0D, Peroxidase, immobilized
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT 25322-68-3, Polyethylene glycol
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

IT 7786-30-3, Magnesium chloride (MgCl2), analysis 9011-18-1, Dextran sulfate sodium
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(lipoprotein aggregators; direct detn. of HDL- and total **cholesterol** in **serum** using peroxidase-entrapped electrode and polyethylene glycol-modified enzymes)

L50 ANSWER 24 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1998:170387 HCAPLUS
DN 128:280548
TI Homogeneous assay for measuring low-density lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate
AU Sugiuchi, Hiroyuki; Irie, Tetsumi; Uji, Yoshinori; Ueno, Tomohiro; Chaen, Toshiko; Uekama, Kaneto; Okabe, Hiroaki
CS Department of Central Laboratory, Kumamoto University Hospital, Kumamoto, 860, Japan
SO Clin. Chem. (Washington, D. C.) (1998), 44(3), 522-531
CODEN: CLCHAU; ISSN: 0009-9147
PB American Association for Clinical Chemistry
DT Journal
LA English
CC **9-16 (Biochemical Methods)**
Section cross-reference(s): 14
AB We have developed a fully automated method for measuring LDL-**cholesterol** (LDL-C) in human **serum** without the need for prior sepn., using a **nonionic surfactant,** polyoxyethylene-polyoxypropylene block copolyether (POE-POP), and a sodium salt of sulfated cyclic maltohexose, .alpha.-cyclodextrin sulfate. Of the **surfactants** tested, POE-POP with a higher mol. mass of the POP block and a greater hydrophobicity reduced the reactivity of **cholesterol** in lipoprotein fractions; the reactivity in descending order was LDL .mchgt. VLDL > chylomicron .apprxeq. HDL. Gel filtration chromatog. studies revealed that POE-POP removed lipids selectively from

the LDL fraction and allowed them to participate in the **cholesterol esterase-cholesterol oxidase** coupling reaction system. By contrast, .alpha.-cyclodextrin sulfate reduced the reactivity of **cholesterol**, esp. in chylomicrons and VLDL. A combination of POE-POP with .alpha.-cyclodextrin sulfate provided the required selectivity for the detn. of LDL-C in **serum** in the presence of magnesium **ions** and a small amt. of dextran sulfate without pptg. lipoprotein aggregates. There was a good correlation between the results of LDL-C assayed by the proposed method and the beta-quantification ref. method involving 161 **sera** with triglyceride concns. ranging from 0.3 to 22.6 mmol/L.

ST LDL **blood** triblock copolymer cyclodextrin sulfate; polyoxyethylene polyoxypropylene block copolyether LDL detn

IT Amphoteric **surfactants**
Anionic **surfactants**
Blood analysis
Cationic **surfactants**
High-performance gel-permeation chromatography
Hyperlipidemia
Immunoassay
Nonionic surfactants
Sample preparation
Surfactants
UV and visible spectroscopy
(homogeneous assay for measuring low-d. lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate)

IT **Blood cholesterol**
Low-density lipoproteins
RL: ANT (Analyte); ANST (Analytical study)
(homogeneous assay for measuring low-d. lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous assay for measuring low-d. lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate)

IT 635-65-4, Bilirubin, analysis 1132-61-2, 4-Morpholinepropanesulfonic acid 7786-30-3, Magnesium chloride, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(homogeneous assay for measuring low-d. lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate)

IT 37191-70-1, .alpha.-Cyclodextrin sulfate, sodium salt 106392-12-5
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(homogeneous assay for measuring low-d. lipoprotein **cholesterol** in **serum** with triblock copolymer and .alpha.-cyclodextrin sulfate)

L50 ANSWER 25 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:731508 HCAPLUS
DN 128:32134
TI Test reagent for detecting **cholesterol** in **blood** **serum** or **plasma**
IN Fujii, Takayuki; Tsuchiya, Hozumi; Tsubota, Hiroyuki
PA Iatron Laboratories, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-92
CC **9-15 (Biochemical Methods)**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09288111	A2	19971104	JP 1996-123901	19960423

AB The method comprises use of lipase to remove turbid impurities from **blood serum** or **plasma**, and use of test reagent comprising polyanion, divalent metal salt, **nonionic surfactant**, **cholesterol esterase**, **cholesterol oxidase**, and **cholesterol dehydrogenase** for quantitating **cholesterol** and high d. lipoprotein in the lipid fraction of **serum** or **plasma** after removing turbid impurities.

ST **serum plasma cholesterol** HDL lipase

IT Salts, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(divalent; reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT Anionic polyelectrolytes
Nonionic surfactants
Plasma (blood)
Serum (blood)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT Lipids, analysis
RL: AMX (Analytical matrix); ANST (Analytical study)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT **High-density lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT Reagents
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

IT 9001-62-1, Lipase
RL: ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reagent for detecting **cholesterol** in **blood serum** or **plasma**)

L50 ANSWER 26 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:717699 HCAPLUS
DN 128:32112
TI Test reagent for determination of HDL-**cholesterol** in lipid fraction of **serum** or **plasma**
IN Fujii, Takayuki; Tsubota, Hiroyuki; Hama, Michio; Kazahaya, Kenji; Tsuchiya, Hozumi
PA Iatron Laboratories, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS G01N033-92
CC **9-5 (Biochemical Methods)**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09285298	A2	19971104	JP 1996-122825	19960422

AB The disclosed test reagent comprises **cholesterol esterase, cholesterol oxidase, cholesterol dehydrogenase,** polyanion, divalent metal salt, **nonionic surfactant** and albumin that is different from the endogenous albumin of **serum** or **plasma** sample. The test reagent is suitable for use in an automatic anal. app.

ST albumin reagent automated analyzer HDL **cholesterol**

IT Salts, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(divalent; test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT Lipids, analysis
RL: AMX (Analytical matrix); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(fraction; test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT Anionic polyelectrolytes
Arteriosclerosis
Myocardial infarction
Nonionic surfactants
Plasma (blood)
Serum (blood)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT **High-density lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT Albumins, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
67775-34-2, Cholesterol dehydrogenase
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

IT 29836-26-8 78617-12-6 85618-21-9
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(test reagent contg. exogenous albumin for detn. of **serum** or **plasma** HDL-**cholesterol**)

L50 ANSWER 27 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:672451 HCAPLUS
DN 127:316463
TI Evaluation of reactivity using direct assay methods for high density lipoprotein **cholesterol**
AU Yamauchi, Kazuyoshi; Tozuka, Minoru; Hidaka, Hiroya; Nakabayashi, Tetsuo; Aoki, Yosimasa; Katsuyama, Tsutomu
CS Cent. Clin. Lab., Shinshu Univ., Matsumoto, 390, Japan
SO Rinsho Kagaku (Nippon Rinsho Kagakkai) (1997), 26(3), 150-156
CODEN: RIKAAN; ISSN: 0370-5633
PB Nippon Rinsho Kagakkai
DT Journal
LA Japanese

CC **9-9 (Biochemical Methods)**

AB We evaluated the lipoprotein specificity of 2 direct methods based on different principles for quantifying high-d. lipoprotein **cholesterol** (HDL-C). Utilizing polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin showed about 6% cross-reactivity for very low-d. lipoprotein (vLDL), while utilizing polyanion and dispersive **surfactant** showed about 5% cross reactivity for low-d. lipoprotein (LDL). There was difference in the reactivity for HDL3 among the 2 direct methods and the pptn. method, but both direct methods exhibited a higher **cholesterol** value for HDL2 than the pptn. method. To investigate the reactivity fo HDL2 in detail, the HDL2 fraction was sepd. into HDL with apo E and HDL without apo E by heparin-sepharose affinity chromatog. The pptn. method measured only HDL without apo E, but HDL-C measured by the 2 direct methods included both of HDL with and without apo E. HDL-C values by the direct method were in agreement with the values of total **cholesterol** in HDL fractions isolated by ultracentrifugation.

ST HDL **cholesterol** detn **blood** lipoprotein cyclodextrin; polyanion **surfactant** vLDL HDL apoE binding

IT **High-density lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(**cholesterol**; evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Surfactants**
(dispersive; evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Blood analysis**
Polyvalent anions
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Blood cholesterol**
High-density lipoproteins 2
High-density lipoproteins 3
Lipoproteins
RL: ANT (Analyte); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Low-density lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT Polyoxyalkylenes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Very low-density lipoproteins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **Apolipoprotein E**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase 25322-68-3,
Polyethylene glycol 120366-24-7, .alpha.-Cyclodextrin sulfate
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(evaluation of reactivity using direct assay methods for HDL-**cholesterol**)

L50 ANSWER 28 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:597800 HCAPLUS

DN 127:244972
TI Measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin
AU Sugiuchi, Hiroyuki; Uji, Yoshinori; Irie, Tetsumi; Uekama, Kaneto; Miyauchi, Kazuto
CS Sch. Med., Kumamoto Univ., Kumamoto, 860, Japan
SO Seibutsu Shiryo Bunseki (1996), 19(5), 305-320
CODEN: SSBUEL; ISSN: 0913-3763
PB Seibutsu Shiryo Bunseki Kagakkai
DT Journal
LA Japanese
CC **9-2** (**Biochemical Methods**)
AB An automated method measuring HDL-**cholesterol** without prior sepn. was developed, using polyethylene glycol (PEG)-modified enzyme and sulfated .alpha.-cyclodextrin. When **cholesterol esterase** and **cholesterol oxidase** enzymes were modified with PEG, they exhibited selective catalytic activities towards lipoprotein fractions, with reactivities increasing in the order: LDL < VLDL .apprxeq. CM < HDL. In the presence of magnesium **ions**, .alpha.-cyclodextrin sulfate reduced the reactivity of **cholesterol**, esp. in CM and VLDL, without the need for pptn. of those lipoprotein fractions. The employment of PEG-modified enzymes with .alpha.-cyclodextrin sulfate provided selectivity for the detn. of HDL-**cholesterol** in **serum** in the presence of a small amt. of dextran sulfate without any need for pptn. of lipoprotein aggregates. The results of the HDL-**cholesterol** assayed in **serum** by this method correlated well with those employing a conventional pptn. method and also those of an ultracentrifugation method.
ST HDL **cholesterol serum**; polyethyleneglycol enzyme sulfated cyclodextrin
IT **Blood analysis**
(measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin)
IT **High-density lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin)
IT Polyoxyalkylenes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin)
IT **57-88-5**, **Cholesterol**, analysis **9028-76-6D**, **Cholesterol oxidase**, PEG modified
RL: ANT (Analyte); ANST (Analytical study)
(measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin)
IT **9026-00-0D**, **Cholesterol esterase**, PEG modified
10016-20-3D, .alpha.-Cyclodextrin, Sulfated 25322-68-3, Polyethylene glycol
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(measurement of HDL-**cholesterol** in human **serum** with a combination of polyethyleneglycol modified enzymes and sulfated .alpha.-cyclodextrin)

L50 ANSWER 29 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:443217 HCAPLUS
DN 127:47453
TI Methods and compositions for determination of high-density lipoprotein-**cholesterol**
IN Kazahaya, Kenji; Hama, Michio; Tanaka, Mitsunao
PA Iatron Laboratories, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
CC **9-16 (Biochemical Methods)**
Section cross-reference(s): 13
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09121895	A2	19970513	JP 1996-248722	19960830
PRAI	JP 1995-246583		19950831		

AB Disclosed is a reagent compn. to be used in the detn. of high-d. lipoprotein (HDL)-**cholesterol** by contacting the sample with **cholesterol esterase** and **cholesterol oxidase**. The compn. consists of .gtoreq.1 of carrageenan, acrylic acid-methacrylic acid-lauryl acrylate copolymer, and octylthioglucoside, and, optionally, an alk. earth metal **ion**. The product of the enzymic reactions is H2O2, which can be detd. by colorimetry and used for the detn. of HDL-**cholesterol**.
ST high d lipoprotein **cholesterol** detn; HDL **cholesterol** detn hydrogen peroxide
IT **Blood analysis**
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT **High-density lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT Alkaline earth **ions**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT Glucosides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(octylthio-; methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT 7786-30-3, Magnesium chloride, uses 9000-07-1, Carrageenan 62478-31-3 85618-21-9, n-Octyl-.beta.-D-thioglucopyranoside
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)
IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase
RL: ARG (Analytical reagent use); CAT (Catalyst use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methods and compns. for detn. of high-d. lipoprotein-**cholesterol**)

L50 ANSWER 30 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1996:509686 HCAPLUS
DN 125:137205
TI Enzyme method for quantitating **cholesterol** in lipoprotein fraction
IN Totsu, Yoshifumi; Shirahase, Yasushi; Takahashi, Masamitsu; **Kishi, Koji**
PA Kokusai Shaku Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

IC ICM C12Q001-32
ICS C12Q001-60
CC 9-2 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08131195	A2	19960528	JP 1994-318835	19941221
PRAI	JP 1994-217716		19940912		

AB The method comprises treatment of **serum** lipoprotein fraction with dextran sulfate, and detn. of **cholesterol** content with **cholesterol dehydrogenase**. The method is useful for automating **cholesterol** anal. and for diagnosis of arteriosclerosis. In example, **cholesterol** content in HDL was detd. by the disclosed method.
ST lipoprotein HDL **cholesterol blood** analysis dehydrogenase
IT Arteriosclerosis
Blood analysis
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT Analysis
(app., automated; aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(high-d., aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT **67775-34-2, Cholesterol dehydrogenase**
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT 1871-22-3D, Tetrazolium blue, analogs
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL fraction)
IT 9042-14-2, Dextran sulfate
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(aggregation treatment with dextran sulfate and enzyme anal. with **cholesterol dehydrogenase** for detn. of **cholesterol** content in **serum** lipoprotein or HDL

fraction)

L50 ANSWER 31 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1996:466972 HCAPLUS
DN 125:109645
TI Method for detecting HDL-**cholesterol** in **blood serum** or **plasma**
IN Majima, Hatsuichi; Asano, Shigeki; Kikuchi, Toshiro; Kawamura, Yoshihisa
PA Toyo Boseki, Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-60
ICS C12Q001-26; C12Q001-28; C12Q001-44
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08116996	A2	19960514	JP 1994-262679	19941026

AB The HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation. The anionic **surfactant** is selected from alkyl sulfonate salt, bile acid, or derivs., and fractionation agent is selected from dextran sulfate, heparin, sodium phosphotungstate, or amylopectin sulfate, or their salts. Both **cholesterol esterase** and oxidase are oligo-glucose-modified or derivatized oxidase and esterase. 4-Aminoantipyrine and peroxidase are used in hydrogen peroxide detn. The method is useful for prognosis of coronary atherosclerosis.
ST HDL **cholesterol** enzyme assay coronary atherosclerosis
IT Arteriosclerosis
Blood analysis
Blood plasma
Blood serum
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)
IT **Lipoproteins**
RL: AMX (Analytical matrix); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)
IT Bile acids
RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)
IT Sulfonates
RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)
(alkane, HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)
IT **Surfactants**
(anionic, HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and

cholesterol oxidase, and measurement of hydrogen peroxide formation)

IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high-d., HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

IT **9026-00-0D, Cholesterol esterase**, oligo-glucose-modified **9028-76-6D, Cholesterol oxidase**, oligo-glucose-modified
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

IT 83-07-8 9003-99-0, Peroxidase
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

IT 9005-49-6D, Heparin, salts 9042-14-2D, Dextran sulfate, salts 9047-13-6D, Amylopectin sulfate, salts 51312-42-6D, Sodium phosphotungstate, salts
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

IT 50-99-7D, Glucose, oligo-
RL: MOA (Modifier or additive use); USES (Uses)
(HDL-**cholesterol** detn. method comprises sepn. of lipoprotein fraction, treatment of sample with anionic **surfactant** and **cholesterol esterase** and **cholesterol oxidase**, and measurement of hydrogen peroxide formation)

L50 ANSWER 32 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1995:897297 HCAPLUS
DN 123:280008
TI Enzymic determination of electrophoretically separated LDL-**cholesterol** from **sera** of cardiac patients
AU Anwar, M.; Hashim, M.; Yaqoob, M.; Yasinzai, M. Masoom
CS Dep. Chem., Univ. Balochistan, Quetta, Pak.
SO J. Chem. Soc. Pak. (1995), 17(1), 40-2
CODEN: JCSPDF; ISSN: 0253-5106
DT Journal
LA English
CC **9-2** (**Biochemical Methods**)
Section cross-reference(s): 14
AB Lipoproteins were isolated by cellulose acetate electrophoresis from **blood** samples of patients with type-III, hyperlipoproteinemia who survived myocardial infarction. The LDL fraction was cut out of the strip and the **cholesterol** extd. The **cholesterol** was detd. by using an immobilized **cholesterol esterase**/oxidase

column in a flow system.
ST **serum** LDL **cholesterol** detn heart infarction; hyperlipoproteinemia LDL **cholesterol** detn **blood**; lipoprotein **cholesterol** detn electrophoresis; cellulose acetate electrophoresis lipoprotein analysis
IT **Blood analysis**
Chylomicrons
Electrophoresis and **Ionophoresis**
(enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high-d., enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT Heart, disease
(infarction, enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(low-d., enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **Lipoproteins**
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(metabolic disorders, hyperlipoproteinemia type III, enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **Lipoproteins**
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(very-low-d., enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(enzymic detn. of electrophoretically sepd. LDL-**cholesterol** from **sera** of cardiac patients)

L50 ANSWER 33 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1995:550505 HCAPLUS
DN 123:4817
TI Direct measurement of high-density lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin
AU Sugiuchi, Hiroyuki; Uji, Yoshinori; Okabe, Hiroaki; Irie, Tetsumi; Uekama, Kaneto; Kayahara, Norihiko; Miyauchi, Kazuto
CS Dep. of Laboratory Medicine, Dumamoto Univ. Medical Sch., Kumamoto, 860, Japan
SO Clin. Chem. (Washington, D. C.) (1995), 41(5), 717-23
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
CC **9-2** (**Biochemical Methods**)
AB The authors have developed an automated method for measuring high-d. lipoprotein (HDL)-**cholesterol** in **serum** without prior sepn., using polyethylene glycol (PEG)-modified enzymes and sulfated .alpha.-cyclodextrin. When **cholesterol esterase** and **cholesterol oxidase** enzymes were modified with PEG, they showed selective catalytic activities towards lipoprotein fraction, with the reactivity increasing in the order; low-d. lipoprotein < very-low-d.

lipoprotein .apprxeq. chylomicron < HDL. In the presence of magnesium **ions**, .alpha.-cyclodextrin sulfate reduced the reactivity of **cholesterol**, esp. in chylomicrons and very-low-d. lipoprotein, without the need for pptn. of those lipoprotein fractions. The combination of PEG-modified enzymes with .alpha.-cyclodextrin sulfate provided selectivity for the detn. of HDL-**cholesterol** in **serum** in the presence of a small amt. of dextran sulfate without the need for pptn. of lipoprotein aggregates. The results of the HDL-**cholesterol** assayed in **serum** by this direct method correlated well with those obtained by pptn.-based methods and also that by an ultracentrifugation method.

ST HDL lipoprotein **cholesterol serum** polyethylene glycol; enzyme sulfated cyclodextrin

IT **Blood analysis**
Chylomicrons
(direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT Enzymes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(high-d., direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(low-d., direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(very-low-d., direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT **9026-00-0, Cholesterol esterase**
9028-76-6, Cholesterol oxidase 10016-20-3D, .alpha.-Cyclodextrin, Sulfated
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

IT 7439-95-4, Magnesium, uses 9042-14-2, Dextran sulfate 25322-68-3
RL: NUU (Other use, unclassified); USES (Uses)
(direct measurement of high-d. lipoprotein **cholesterol** in **serum** with polyethylene glycol-modified enzymes and sulfated .alpha.-cyclodextrin)

L50 ANSWER 34 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1994:503604 HCAPLUS
DN 121:103604
TI Method for detecting lipoprotein (a) and associated **cholesterol**
IN Seman, Leo J.
PA USA
SO U.S., 7 pp. Cont.-in-part of U.S. Ser. No. 704,457, abandonded.
CODEN: USXXAM
DT Patent
LA English

IC ICM G01N033-53
ICS G01N033-549; G01N033-92
NCL 436071000
CC **9-5** (**Biochemical Methods**)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5320968	A	19940614	US 1993-21189	19930223
	AT 183312	E	19990815	AT 1992-913182	19920521
PRAI	US 1991-704457		19910523		

AB A method for assaying lipoprotein (a) in a liq. sample contg. other lipoproteins, and an assay device for use in the method are disclosed. In the method, the liq. is contacted with a solid-support reagent contg. lectin attached to a solid support, under conditions effective to bind lipoprotein (a) to the support-bound lectin. After removing unbound lipoproteins, the amt. of lipoprotein (a) bound to the support is assayed. In one embodiment, the method and assay device are designed for assaying **cholesterol** assocd. with lipoprotein (a). Lipoprotein (a) and **cholesterol** detn. in human **plasma** with immobilized wheat germ agglutinin was illustrated.

ST **blood** lipoprotein a **cholesterol** detn lectin

IT King crab
(lectin of, lipoprotein (a) binding to support-bound, for lipoprotein (a) detn.)

IT **Blood analysis**
(lipoprotein (a) and assocd. **cholesterol** detn. in, support-bound lectin in)

IT Agglutinins and Lectins
RL: ANST (Analytical study)
(lipoprotein (a) binding to support-bound, for lipoprotein (a) detn. in liq. sample)

IT **Surfactants**
(lipoprotein (a) reaction with, for **cholesterol** release)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(Lp(a), detn. of, in liq. sample contg. other lipoproteins, immobilized lectin in)

IT Bean
(P. limensis, agglutinin of, lipoprotein (a) binding to support-bound, for lipoprotein (a) detn.)

IT Wheat
(germ, lectin of, lipoprotein (a) binding to support-bound, for lipoprotein (a) detn.)

IT Agglutinins and Lectins
RL: ANST (Analytical study)
(phytohemagglutinins, lipoprotein (a) binding to support-bound, for lipoprotein (a) detn.)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in lipoprotein (a))

IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, with peroxidase, for **cholesterol** detn.)

IT 9003-99-0, Peroxidase
RL: ANST (Analytical study)
(hydrogen peroxide detn. with, for **cholesterol** detn.)

IT **9028-76-6, Cholesterol oxidase**
RL: ANST (Analytical study)
(in **cholesterol** detn.)

IT 131-48-6D, N-Acetylneuraminic acid, lipoprotein (a) contg. 7512-17-6D, N-Acetyl-D-glucosamine, lipoprotein (a) contg.
RL: ANST (Analytical study)
(lectin binding to, for lipoprotein (a) detn.)

IT **9026-00-0, Cholesterol esterase**
RL: ANST (Analytical study)
(lipoprotein (a) reaction with, for **cholesterol** release)

L50 ANSWER 35 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1993:55596 HCAPLUS
DN 118:55596
TI Solid-phase method for detecting lipoprotein (a) and associated **cholesterol** in a liquid sample
IN Seman, Leo J., Jr.
PA USA
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N021-75
ICS G01N033-92
CC **9-1** (**Biochemical Methods**)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9221015	A1	19921126	WO 1992-US4302	19920521
	W: JP, NO				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	EP 585387	A1	19940309	EP 1992-913182	19920521
	EP 585387	B1	19990811		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
	AT 183312	E	19990815	AT 1992-913182	19920521
PRAI	US 1991-704457		19910523		
	WO 1992-US4302		19920521		

AB Lipoprotein (a) [Lp(a)] is assayed in a liq. sample by contacting the sample with a Lp(a)-binding lectin attached to a solid support, removing lipoproteins which do not bind to the support, releasing Lp(a) from the support, and assaying the released Lp(a). The lectin binds specifically to N-acetyl-D-glucosamine and N-acetylneuraminic acid units on Lp(a). Lp(a) **cholesterol** is detd. with **cholesterol oxidase** after releasing the **cholesterol** from either bound or free Lp(a) with **cholesterol esterase** and a **surfactant**. Thus, Lp(a) was sepd. from human **plasma** by chromatog. on wheat germ agglutinin-Sepharose, washing the column with phosphate-buffered saline (PBS) contg. 0.3 mM di-Na EDTA and eluting with PBS contg. 100 mM N-acetyl-D-glucosamine.
ST lipoprotein a **cholesterol** detn **plasma**
IT King crab
(agglutinin of, immobilized, lipoprotein Lp(a) detn. in **blood** with)
IT **Surfactants**
(**cholesterol** release from lipoprotein Lp(a) with **cholesterol esterase** and)
IT Agglutinins and Lectins
RL: ANST (Analytical study)
(immobilized, lipoprotein Lp(a) detn. in **blood** with)
IT **Blood analysis**
(lipoprotein Lp(a) detection in, carrier-bound lectin in)
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(Lp(a), detection of, in **blood**, carrier-bound lectin in)
IT Wheat
(germ, agglutinin of, immobilized, lipoprotein Lp(a) detn. in **blood** with)
IT Agglutinins and Lectins
RL: ANST (Analytical study)
(phytohemagglutinins, immobilized, lipoprotein Lp(a) detn. in **blood** with)
IT Bean
(P. limensis, agglutinin of, immobilized, lipoprotein Lp(a) detn. in **blood** with)
IT **9026-00-0, Cholesterol esterase**
RL: ANST (Analytical study)

(**cholesterol** release from lipoprotein Lp(a) with **surfactant** and)

IT 131-48-6, N-Acetylneuraminic acid 7512-17-6, N-Acetyl-D-glucosamine
RL: ANST (Analytical study)
(of lipoprotein Lp(a), lectin binding to)

IT **57-88-5, Cholesterol**, biological studies
RL: BIOL (Biological study)
(of lipoprotein Lp(a), of **blood**, detn. of, enzymic-spectrophotometric)

L50 ANSWER 36 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1991:118086 HCAPLUS
DN 114:118086
TI Multilayer test element comprising fractionation agent for determination of high density lipoproteins
IN Tamura, Mutsuhiko; Iwadate, Yutaka; Yamamoto, Takeshi
PA Konica Co., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-92
ICA C12Q001-00; C12Q001-60
CC **9-1** (**Biochemical Methods**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02210265	A2	19900821	JP 1989-29682	19890210

PI JP 02210265 A2 19900821 JP 1989-29682 19890210

AB A multilayer test element for detn. of high-d. lipoproteins consists of: (1) .gtoreq.1 reaction agent layer on a support material; (2) a porous spreading layer located on the top of the reaction agent layer(s); and (3) an addnl. spreading layer contg. an agent for fractionation of high-d. lipoprotein. A 180 .mu.m thick transparent film was coated with a reaction agent contg. gelatin, 7-chloro-3-[2-(2-hexyldecylsulfonyl)ethyl]-6-methylpyrazolone[3,2-c]-s-triazole, peroxidase, ascorbic acid oxidase, Na triisopropylnaphthalenesulfonate, 1,2-bis(vinylsulfonyl)ethane, di-Bu phthalate, Na azide, and N-(2-hydroxyethyl)piperazine-N'-2-ethanesulfonic acid. The film was further coated with a spreading layer contg. filter paper fibers, styrene-glycidyl methacrylate copolymer, polyoxyethylene lauryl ether, **cholesterol oxidase**, **cholesterol esterase**, bovine **serum** albumin, 4-(N,N-'-diethylamino)-2-(2'-methanesulfonamido ethyl)aniline hydrochloride, ascorbic acid oxidase, and vinylpyrrolidone-vinylacetate copolymer; and then coated with a fractionation spreading layer contg. styrene-glycidyl methacrylate copolymer, ethylenediamine, **surfactant** 10G (p-nonylphenoxy polyglycitol), dextran Na sulfate, MgCl2, and NaCl. A control test element was also made by the same procedure except that no fractionation layer was added. Five different human **serum** samples with or without pretreatment with fractionation agent were dropped on the test elements with or without fractionation spreading layer. The color development of the unpretreated samples was not distinctive on the test elements without fractionation spreading layer, but distinctive on those with fractionation spreading layer.

ST lipoprotein high density fractionation detn; test strip high density lipoprotein

IT **Blood analysis**
(high-d. **cholesterol** detn. in, by test element contg. fractionation spreading layer)

IT Gelatins, uses and miscellaneous
RL: USES (Uses)
(in reaction layer of test element for detn. of high-d. **cholesterol** in **blood** sample)

IT Filter paper
Albumins, uses and miscellaneous
RL: USES (Uses)
(in spreading layer of test element for detn. of high-d.

cholesterol in **blood** sample)

IT Separation
(fractionation, of high-d. lipoprotein, by test element contg. fractionation spreading layer)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(high-d., detn. of, in biol. sample, by test element contg. fractionation spreading layer)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in high-d. lipoprotein, in biol. sample, by test element contg. fractionation spreading layer)

IT 104-40-5D, ethers with polyglycidol 107-15-3, Ethylenediamine, uses and miscellaneous 9011-18-1, Dextran sodium sulfate 25167-42-4 25722-70-7D, ethers with p-nonylphenol 51569-39-2, **Surfactant** 10G 7647-14-5, Sodium chloride (NaCl), uses and miscellaneous 7786-30-3, Magnesium chloride (MgCl2), uses and miscellaneous
RL: ANST (Analytical study)
(in fractionation spreading layer of test element for detn. of high-d. **cholesterol**)

IT 84-74-2, Dibutyl phthalate 1323-19-9, Sodium triisopropylnaphthalenesulfonate 7365-45-9 9003-99-0, Peroxidase 9029-44-1, Ascorbic acid oxidase 26628-22-8, Sodium azide 39690-70-5, 1,2-Bis(vinylsulfonyl)ethane 115007-10-8
RL: ANST (Analytical study)
(in reaction layer of test element for detn. of high-d. **cholesterol** in **blood**)

IT 9002-92-0
RL: ANST (Analytical study)
(in spreading layer of test element for detn. of high-d. **cholesterol** in **blood** sample)

IT **9026-00-0, Cholesterol esterase** 25086-89-9, Vinylpyrrolidone-vinylacetate copolymer 120234-13-1
RL: ANST (Analytical study)
(polyoxyethylene lauryl ether)

L50 ANSWER 37 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1990:18388 HCAPLUS
DN 112:18388
TI Improved method for enzymic determination of **cholesterol** in lipoproteins separated by electrophoresis on thin layer agarose gels
AU Aufenanger, Johannes; Haux, P.; Kattermann, R.
CS Inst. Klin. Chem., Univ. Heidelberg, Mannheim, Fed. Rep. Ger.
SO J. Clin. Chem. Clin. Biochem. (1989), 27(10), 807-13
CODEN: JCCBDT; ISSN: 0340-076X
DT Journal
LA English
CC **9-2** (**Biochemical Methods**)
AB The **cholesterol** of lipoproteins, sepd. electrophoretically on thin layer agarose films, is visualized and quantitated by incubating the gels in an enzymic reagent contg. **cholesterol esterase** and **cholesterol dehydrogenase**. The individual fractions are quantitated by scanning densitometry. No sample pretreatment is necessary. All major fractions are detected readily. The accuracy of the detn. is similar to that of ultracentrifugation. On av., imprecision is 3.1% for .beta.-, 7.0% for pre.beta.-, and 4.8% for .alpha.-lipoprotein **cholesterol**. Concn. and color development are linear up to 8 mmol/L **cholesterol** in a given lipoprotein fraction. The results from the direct enzymic procedure for .beta.-, pre.beta.-, and .alpha.-lipoprotein **cholesterol** are compared with those from quant. lipoprotein electrophoresis after pptn. with phosphotungstic acid and bivalent cations and with those from different pptn. methods using dextran sulfate and polyethylene glycol. The new method has the following advantages: high specificity, lack of dependence on the actual compn. of the lipoproteins, lack of interference from copptd. proteins in the gel, e.g., fibrinogen or paraproteins, and

insensitivity to lipolysis and high free fatty acid concns. caused by heparin application or aging of the specimen (at least for .alpha.-lipoprotein **cholesterol** quantitation). In its convenience and simplicity of operation, and the simple calcn. of results, the method is similar to std. protein electrophoresis. The proposed method is therefore suggested as a std. method for elucidating lipoprotein disorders.

ST thin layer agarose gel electrophoresis; **blood** lipoprotein **cholesterol** detn; **cholesterol** detn enzymic spectrometry

IT **Blood analysis**
(**cholesterol** of lipoproteins detn. in, by agarose gel electrophoresis and enzymic-spectrometry)

IT **Lipoproteins**
RL: ANST (Analytical study)
(electrophoresis of, on thin-layer agarose gels, **cholesterol** enzymic detn. after)

IT Electrophoresis and **Ionophoresis**
(gel, of lipoproteins, on agarose, **cholesterol** enzymic detn. after)

IT **Lipoproteins**
RL: ANST (Analytical study)
(pre-.beta.-, electrophoresis of, on thin-layer agarose gels, **cholesterol** enzymic detn. after)

IT **Lipoproteins**
RL: ANST (Analytical study)
(.alpha.-, electrophoresis of, on thin-layer agarose gels, **cholesterol** enzymic detn. after)

IT **Lipoproteins**
RL: ANST (Analytical study)
(.beta.-, electrophoresis of, on thin-layer agarose gels, **cholesterol** enzymic detn. after)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, enzymic, of lipoproteins sepd. by electrophoresis on thin-layer agarose gels)

IT **9026-00-0, Cholesterol esterase**
67775-34-2, Cholesterol dehydrogenase
RL: ANST (Analytical study)
(in **cholesterol** detn. in lipoproteins sepd. by electrophoresis on thin-layer agarose gels)

L50 ANSWER 38 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1989:228154 HCAPLUS
DN 110:228154
TI Method and reagent for specific determination of high-density lipoprotein **cholesterol**
IN Kerscher, Lorenz; Pautz, Brigitte; Trunk, Gisela; Ziegenhorn, Joachim
PA Boehringer Mannheim G.m.b.H., Fed. Rep. Ger.
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C12Q001-60
ICS G01N033-68; G01N033-92; C12Q001-44
ICA C12Q001-26
CC **9-5** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3636851	A1	19880511	DE 1986-3636851	19861029
	US 4892815	A	19900109	US 1987-107467	19871006
	CA 1309645	A1	19921103	CA 1987-549035	19871009
	JP 63126498	A2	19880530	JP 1987-269522	19871027
	JP 07034760	B4	19950419		
	FI 8704749	A	19880430	FI 1987-4749	19871028
	FI 90882	B	19931231		

EP 265933 A2 19880504 EP 1987-115841 19871028
EP 265933 A3 19891206
EP 265933 B1 19930203
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE
AU 8780446 A1 19880505 AU 1987-80446 19871028
AU 588143 B2 19890907
AT 85366 E 19930215 AT 1987-115841 19871028
PRAI DE 1986-3636851 19861029
EP 1987-115841 19871028

AB The **cholesterol** content of the high d. lipoprotein (HDL) fraction of **serum** is detd. enzymically in the presence of low-d. lipoproteins (LDL) by incubation of the sample with **cholesterol esterase** (I), **cholesterol oxidase** (II), and O2 under specified reaction conditions and in the presence of a bile acid-type **surfactant** and kinetic measurement of the H2O2 formed over the period 2-15 min after the start of the II reaction. The LDL **cholesterol** is oxidized principally during the initial period of the II reaction, so that the rate of H2O2 prodn. during the subsequent phase is proportional to the HDL **cholesterol** concn. Human **sera** (0.02 mL) with equal LDL **cholesterol** contents at different HDL **cholesterol** contents were incubated at 30.degree. with 2.0 mL of a reagent contg. 0.1M K phosphate buffer (pH 6.7), 8.6 mM tribromohydroxybenzoic acid, 1.6 mM 4-aminoantipyrine, 3 mM Na cholate, 0.1% PEG 6000. 0.1% Thesit, swine pancreas I (1 unit/mL), Nocardia II (1 unit/mL), and peroxidase (2.5 units/mL). The initial rate of increase in absorbance at 546 nM was largely independent of the HDL **cholesterol** concn., whereas from 6 min on the rate of increase was proportional to the HDL **cholesterol** concn.

ST **cholesterol** detn high density lipoprotein; **serum** lipoprotein **cholesterol** detn

IT **Blood analysis**
(**cholesterol** detn. in high-d. lipoproteins of, enzymic)

IT Bile acids
RL: ANST (Analytical study)
(in **cholesterol** detn. in high-d. lipoproteins of **blood serum**)

IT Antibodies
RL: ANST (Analytical study)
(to apolipoprotein B and low-d. lipoprotein, in **cholesterol** enzymic detn. in high-d. lipoproteins of **blood serum**)

IT **Lipoproteins**
RL: ANST (Analytical study)
(apo-, B, antibodies to, in **cholesterol** enzymic detn. in high-d. lipoproteins of **blood serum**)

IT **Lipoproteins**
RL: ANST (Analytical study)
(high-d., **cholesterol** of, detn. of, in **blood serum**, enzymic)

IT **Lipoproteins**
RL: ANST (Analytical study)
(low-d., **cholesterol** of high-d. lipoproteins detn. in **blood serum** in presence of, enzymic)

IT **Surfactants**
(**nonionic**, in **cholesterol** detn. in high-d. lipoproteins of **blood serum**)

IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, of high-d. lipoproteins of **blood serum**, enzymic)

IT 361-09-1, Sodium cholate 9002-92-0, Thesit **9026-00-0**, **Cholesterol esterase 9028-76-6**, **Cholesterol oxidase** 25322-68-3, Poly(ethylene oxide)
RL: ANST (Analytical study)
(in **cholesterol** detn. in high-d. lipoproteins of **blood serum**)

L50 ANSWER 39 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1988:607814 HCAPLUS
DN 109:207814
TI Immunoturbidimetric method for routine determinations of apolipoproteins A-I, A-II, and B in normo- and hyperlipemic **sera** compared with immunonephelometry
AU Siedel, J.; Schiefer, S.; Rosseneu, M.; Bergeaud, R.; De Keersgieter, W.; Pautz, B.; Vinaimont, N.; Ziegenhorn, J.
CS Biochem. Res. Cent., Boehringer Mannheim G.m.b.H., Tutzing, D-8132, Fed. Rep. Ger.
SO Clin. Chem. (Winston-Salem, N. C.) (1988), 34(9), 1821-5
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
CC **9-10 (Biochemical Methods)**
Section cross-reference(s): 14
AB A method is described for routine immunoturbidimetry of apolipoproteins (apo) A-I, A-II, and B in both normo- and hyperlipemic **sera**. A special antiserum reagent, consisting of a highly concd. mixt. of **nonionic** and anionic detergents (final concn. in the assay, 36 g/L), rapidly removes intrinsic turbidities of even strongly lipemic **sera** without interfering with the antigen-antibody pptn. reaction. The method has good precision, and obviates the need for special sample pretreatment, extended incubation periods, and measurement of sample blanks. A comparison with established immunonephelometric assays generally showed close agreement for anal. recoveries of the three apolipoproteins. However, in samples contg. .gtoreq.18g of triglycerides per L, the nephelometric assays yielded about two- to threefold higher values for apo A-II and B than did the turbidimetric procedure. To elucidate this discrepancy, the turbidimetric methods were used to assay **sera** with and without enzymic lipolytic pretreatment. Even for samples with triglyceride concns. up to 60 g/L, complete enzymic lipolysis (as evidenced by thin-layer chromatog.) did not significantly alter the recoveries of apo A-II and B from those obtained with the untreated specimens. Thus the immunoturbidimetric methods yield reliable results for apo A-I, A-II, and B, not only in normo- but also in hyperlipemic **sera**.
ST apolipoprotein AI AII B detn; immunoturbidimetry apolipoprotein detn **blood serum**; hyperlipemia **serum** apolipoprotein
IT **Blood analysis**
(apolipoprotein detn. in, by immunoturbidimetry)
IT Glycerides, uses and miscellaneous
RL: USES (Uses)
(apolipoproteins detn. in **blood serum** by immunoassays in relation to)
IT **Surfactants**
(in apolipoproteins detn. in normo- and hyperlipemic **sera** by immunoturbidimetry)
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(apo-, A-I, detn. of, in normo- and hyperlipemic **sera** by immunoturbidimetry)
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(apo-, A-II, detn. of, in normo- and hyperlipemic **sera** by immunoturbidimetry)
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(apo-, B, detn. of, in normo- and hyperlipemic **sera** by immunoturbidimetry)
IT Immunochemical analysis
(immunonephelometry, for apolipoproteins, in normo- and hyperlipemic **sera**)
IT Immunochemical analysis
(immunoturbidimetry, for apolipoproteins, in normo- and hyperlipemic

sera)
IT 9001-62-1, Lipase **9026-00-0, Cholesterol esterase**
RL: ANST (Analytical study)
(apolipoproteins detn. in normo- and hyperlipemic **sera** by immunoturbidimetry in relation to)

L50 ANSWER 40 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1987:455331 HCAPLUS
DN 107:55331
TI Method and reagent for specific determination of high-density lipoprotein **cholesterol** in **serum**
IN Kerscher, Lorenz; Siedel, Joachim; Ziegenhorn, Joachim; Pautz, Brigitte
PA Boehringer Mannheim G.m.b.H., Fed. Rep. Ger.
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C12Q001-60
ICS G01N033-92
CC **9-5** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3533288	A1	19870326	DE 1985-3533288	19850918
	AU 8661163	A1	19870319	AU 1986-61163	19860814
	AU 574931	B2	19880714		
	ES 2001417	A6	19880516	ES 1986-1650	19860905
	US 4851335	A	19890725	US 1986-908031	19860916
	FI 8603752	A	19870319	FI 1986-3752	19860917
	FI 83975	B	19910614		
	FI 83975	C	19910925		
	DK 8604459	A	19870319	DK 1986-4459	19860917
	JP 62069999	A2	19870331	JP 1986-218274	19860918
	JP 06016720	B4	19940309		
	EP 218127	A1	19870415	EP 1986-112875	19860918
	EP 218127	B1	19891213		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 48649	E	19891215	AT 1986-112875	19860918
PRAI	DE 1985-3533288		19850918		
	EP 1986-112875		19860918		

AB High-d. lipoprotein (HDL) **cholesterol** is detd. in **serum** or **plasma** without prior sepn. of HDL from low- and very-low-d. lipoproteins and chylomicrons by (1) initial detn. of **cholesterol** in the latter fractions by incubation with **cholesterol esterase** and **cholesterol oxidase** in the presence of a bile salt or dioctyl sulfosuccinate, and (2) addn. of a **nonionic** detergent contg. poly(ethylene oxide) groups or a secondary alkane sulfonate, incubation, and detn. of the addnl. **cholesterol** release from HDL. The reaction is quantitated by photometry of the product formed by reaction of H2O2 (formed in the **cholesterol oxidase** reaction) with a chromogen. Alternatively, the first incubation may be performed in the absence of chromogen with destruction of the H2O2 formed, and the chromogen may be added for the second incubation for a direct measurement of HDL **cholesterol**.
ST high density lipoprotein **cholesterol** detn; **blood** lipoprotein **cholesterol** detn detergent; bile salt lipoprotein **cholesterol** detn
IT **Blood analysis**
(**cholesterol** detn. in high-d. lipoproteins in, detergents effect on)
IT Bile salts
RL: ANST (Analytical study)
(**cholesterol** detn. in high-d. lipoproteins of **blood plasma** or **serum** in relation to)

IT Sulfonic acids, uses and miscellaneous
RL: USES (Uses)
(alkane, **cholesterol** detn. in high-d. lipoproteins of **blood plasma** or **serum** in relation to)
IT **Lipoproteins**
RL: ANST (Analytical study)
(high-d., **cholesterol** of, detn. of, in **blood plasma** or **serum**, detergents in)
IT Detergents
(**nonionic, cholesterol** detn. in high-d. lipoproteins of **blood plasma** or **serum** in relation to)
IT 361-09-1, Sodium cholate 2373-23-1, Dioctyl sulfosuccinate 25322-68-3, PEG 25322-68-3D, PEG, derivs.
RL: ANST (Analytical study)
(**cholesterol** detn. in high-d. lipoproteins of **blood plasma** or **serum** in relation to)
IT **57-88-5, Cholesterol**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in high-d. lipoproteins of **blood plasma** or **serum**, detergents in)

L50 ANSWER 41 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1986:17335 HCAPLUS
DN 104:17335
TI Isolation and characterization of glycosaminoglycans in human **plasma**
AU Staprans, I.; Felts, J. M.
CS Veterans Adm. Med. Cent., San Francisco, CA, 94121, USA
SO J. Clin. Invest. (1985), 76(5), 1984-91
CODEN: JCINAO; ISSN: 0021-9738
DT Journal
LA English
CC **9-10** (**Biochemical Methods**)
AB A method is described for the isolation and quantitation of glycosaminoglycans present in human **plasma**. **Plasma** glycosaminoglycans can be quant. adsorbed on a DEAE-Sephacel **ion** exchanger and eluted with a salt gradient as 2 groups: a low-charge fraction and a high-charge fraction. The low-charge fraction consists of chondroitin sulfate with a low sulfate content and the high-charge fraction consists of heparan sulfate, chondroitin sulfate, and keratan sulfate (type I). The **plasma** concn. of each of these glycosaminoglycans was detd. in 6 normal human subjects. None of the glycosaminoglycans in **plasma** are covalently linked to **plasma** proteins. All are isolated as complexes with **plasma** proteins in noncovalent linkages. The glycosaminoglycans in the low-charge fraction are bound with high affinity to a single **plasma** glycoprotein by a lectin-type bond that can be disrupted by a simple glycoside. The high-charge fraction contains 3 major proteins and several minor proteins assocd. with the glycosaminoglycans assocd. with glycosaminoglycans represent <0.5% of the total **plasma** proteins. Little is known about the physiol. role of the **plasma** glycosaminoglycans as components of metabolic processes. Because glycosaminoglycans have been implicated in lipid metab. and atherosclerosis, all of these compds. were tested, isolated in free form, on the in vitro hydrolysis of triglycerides by **lipoprotein lipase**. **Plasma** heparan sulfate stimulated the rate of this reaction severalfold. All other **plasma** glycosaminoglycans were inactive. Thus, **plasma** heparan sulfate may play an important role in **plasma** lipoprotein metab.
ST **plasma** glycosaminoglycan detn characterization; lipoprotein metab heparan sulfate **plasma**
IT **Blood analysis**
(glycosaminoglycans detn. in, of humans, characterization and lipoprotein metab. in relation to)
IT Glycerides, reactions

RL: RCT (Reactant)
(hydrolysis of, by **lipoprotein lipase**, stimulation of, by heparan sulfate)

IT **Lipoproteins**
RL: ANST (Analytical study)
(of **blood plasma** of humans, metab. of, heparan sulfate effect on)

IT Mucopolysaccharides, analysis
RL: ANT (Analyte); ANST (Analytical study)
(glycosaminoglycans, detn. of, in **blood plasma** of humans, characterization and lipoprotein metab. in relation to)

IT 9007-28-7 9050-30-0 9056-36-4 24967-93-9
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in **blood plasma** of humans, characterization and lipoprotein metab. in relation to)

IT **9004-02-8**
RL: RCT (Reactant)
(triglyceride hydrolysis by, stimulation of, by heparan sulfate)

L50 ANSWER 42 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1983:572383 HCAPLUS
DN 99:172383
TI Specific determination of **cholesterol** in the LDL-fraction of **serum**
IN Ziegenhorn, Joachim; Roeder, Albert; Bartl, Knut; Wehmeyer, Gunter
PA Boehringer Mannheim G.m.b.H. , Fed. Rep. Ger.
SO Ger. Offen., 22 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C12Q001-60
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3208253	A1	19830915	DE 1982-3208253	19820308
	US 4544630	A	19851001	US 1983-468792	19830222
	JP 58165800	A2	19830930	JP 1983-33012	19830302
	EP 88420	A2	19830914	EP 1983-102231	19830307
	EP 88420	A3	19850605		
	EP 88420	B1	19860924		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 22467	E	19861015	AT 1983-102231	19830307
PRAI	DE 1982-3208253		19820308		
	EP 1983-102231		19830307		

AB **Cholesterol** is detd. in the **serum** low-d. lipoprotein (LDL) fraction in the presence of high-d. lipoproteins with 0.01-1.5 mM **surfactant**, 0.1-30 units/mL **cholesterol esterase** , and at pH 6.5-8.0, and with a reaction time ranging 0.5-15 min. In 1 example, **cholesterol** was detd. in a human **serum** LDL fraction with **cholesterol oxidase**, peroxidase, phenol, 4-aminoantipyrine, Tris-HCl, **cholesterol esterase**, and Aerosol OT. A linear relation was obsd. between LDL **cholesterol** and absorbance. No such relation was obsd. when the title assay was applied to the high-d. lipoprotein fraction.

ST **cholesterol** detn enzymic **serum** lipoprotein; low density lipoprotein **cholesterol** detn

IT **Blood analysis**
(**cholesterol** detn. in low-d. lipoproteins of, of humans, enzymic)

IT Candida
Pseudomonas
(**cholesterol esterase** of, in **cholesterol** detn. in low-d. lipoproteins)

IT Nocardia erythropolis
(**cholesterol oxidase** of, in **cholesterol**

detn. in low-d. lipoproteins)

IT **Surfactants**
(in **cholesterol** detn. in low-d. lipoproteins)

IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(low-d., **cholesterol** detn. in, of human **blood** **serum**, enzymic)

IT 57-09-0 302-95-4 577-11-7
RL: ANST (Analytical study)
(as **surfactant**, in **cholesterol** enzymic detn. in low-d. lipoproteins)

IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in low-d. lipoproteins of human **blood** **serum**, enzymic)

IT 83-07-8 108-95-2, uses and miscellaneous 9003-99-0 **9026-00-0** **9028-76-6**
RL: ANST (Analytical study)
(in **cholesterol** detn. in low-d. lipoproteins)

L50 ANSWER 43 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1982:541345 HCAPLUS
DN 97:141345
TI Apolipoprotein assay using a **surfactant**
IN Heuck, Claus Christian
PA Fed. Rep. Ger.
SO Can., 22 pp. Division of Can. Appl. No. 331,145.
CODEN: CAXXA4
DT Patent
LA English
IC G01N033-54
CC **9-2** (**Biochemical Methods**)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1127077	A2	19820706	CA 1981-380639	19810625
	DE 2829531	A1	19800124	DE 1978-2829531	19780705
	CA 1126651	A1	19820629	CA 1979-331145	19790704
PRAI	DE 1978-2829531		19780705		
	CA 1979-331145		19790704		

AB Apolipoproteins, esp. apolipoprotein B, are detd. in low-d. and very-low-d. lipoproteins of turbid human **blood** by immunonephelometry in the presence of a **nonionic** **surfactant** after enzymic degrdn. of the lipids. The **surfactant** is present at 10-3 to 10-1% by vol.

ST apolipoprotein immunonephelometry **blood surfactant**

IT **Blood analysis**
(apolipoproteins detn. in, of human by immunonephelometry, enzymic hydrolysis and **surfactants** in)

IT Enzymes
RL: ANST (Analytical study)
(lipid-degrading, apolipoprotein detn. in human **blood** by immunonephelometry in relation to)

IT Lipids, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, as interfering substances in apolipoproteins detn. in human **blood** by immunonephelometry)

IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(apo-, detn. of, in human **blood** by immunonephelometry, enzymic hydrolysis and **surfactants** in)

IT Immunochemical analysis
(immunonephelometry, for apolipoproteins, of human **blood**)

IT **Surfactants**
(**nonionic**, apolipoproteins detn. by immunonephelometry in presence of)

IT 9001-62-1 9001-67-6 9001-86-9 9001-87-0 9016-18-6
9026-00-0
RL: ANST (Analytical study)
(apolipoprotein detn. in human **blood** by immunonephelometry in relation to)

L50 ANSWER 44 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1981:79885 HCAPLUS
DN 94:79885
TI Novel reagent for separation of lipoproteins
PA Wako Pure Chemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC G01N033-68; C12Q001-60; G01N033-92
CC **9-4** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55159158	A2	19801211	JP 1979-67621	19790531
	JP 63011628	B4	19880315		

AB A pptg. reagent for the sepn. of .alpha.-lipoprotein from .beta.-lipoprotein contains divalent metal **ion**, polyanion compds., alkali metal **ion**, and(or) NH4+ and alumina, aluminum silicate, fibrin, fibrinogen, and(or) albumins. The method can be used in the detn. of .alpha.- and .beta.-lipoprotein **cholesterol**. E.g., 50 .mu.L **blood serum** was treated with 2.0 mL of a soln. contg. heparin 40, MnCl2 1600, NaCl 900, fibrin 10 mg, and H2O to 100 mL, and the resultant mixt. was centrifuged at 3000 rpm for 15 min. The supernatant (1 mL) was treated with 2 mL of a reagent contg. **cholesterol oxidase**, **cholesterol esterase**, peroxidase, 4-aminoantipyrine, p-chlorophenol, taurocholic acid, and Tris buffer at 37.degree. for 5 min and analyzed spectrometrically at 505 nm for the detn. of .alpha.-lipoprotein **cholesterol**.
ST lipoprotein pptg reagent; **cholesterol** detn **serum** lipoprotein; enzymic spectrometry lipoprotein **cholesterol**
IT **Blood analysis**
(**cholesterol** detn. in lipoproteins in, enzymic spectrometric, pptg. reagent for)
IT Enzymes
RL: ANST (Analytical study)
(in **cholesterol** spectrometric detn. in lipoproteins)
IT Fibrinogens
Fibrins
RL: ANST (Analytical study)
(in lipoprotein pptg. reagent)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(.alpha.-, **cholesterol** detn. in, enzymic spectrometric, pptg. reagent for)
IT **Lipoproteins**
RL: PROC (Process)
(.beta.-, sepn. of, pptg. reagent for)
IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in lipoproteins, enzymic spectrometric, pptg. reagent for)
IT 1344-28-1, uses and miscellaneous 7786-30-3, uses and miscellaneous 58425-86-8
RL: USES (Uses)
(in lipoprotein pptg. reagent)

L50 ANSWER 45 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1980:582419 HCAPLUS
DN 93:182419

TI Precipating agent for low-density lipoproteins
PA Wako Pure Chemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC G01N033-68; G01N033-92
CC **9-6** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55093065	A2	19800715	JP 1978-162096	19781229
	JP 58048857	A2	19830322	JP 1982-60567	19820412
PRAI	JP 1978-162096		19781229		

AB A pptg. agent for low-d. lipoproteins is described which contains heparin, Mn2+, and alkali metal **ions** or NH4+. Thus, a pptg. agent consisted of heparin 40, MnCl2 1600, NaCl 880 mg, and distd. H20 to 100 mL. **Blood serum** (100 .mu.L) was mixed with 3 mL of the reagent, centrifuged at 3000 rpm for 15 min, and the supernatant (2 mL) was treated with 1 mL of a soln. contg. **cholesterol oxidase**, **cholesterol esterase**, peroxidase, 4-aminoantipyrine, PhOH, Triton X 100, and TRIS at 37.degree. for 5 min, and analyzed spectrometrically at 505 nm for the detn. of high-d. lipoprotein **cholesterol**.
ST low density lipoprotein pptg agent; **serum** high density lipoprotein **cholesterol** detn; enzymic high density lipoprotein **cholesterol** detn; spectrometry high density lipoprotein **cholesterol**
IT **Blood analysis**
(**cholesterol** detn. in high-d. lipoproteins in, pptg. agent for)
IT **Lipoproteins**
RL: ANST (Analytical study)
(high-d., of **blood serum**, **cholesterol** detn. in, pptg. agent for)
IT **Lipoproteins**
RL: ANST (Analytical study)
(low-d., of **blood serum**, pptg. agent for)
IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in high-d. lipoproteins of **blood serum**, enzymic-spectrometric)
IT 7447-40-7, biological studies 7647-14-5, biological studies 7773-01-5
7783-20-2, biological studies 9005-49-6, biological studies
RL: BIOL (Biological study)
(pptg. agents contg., for low-d. lipoproteins)

L50 ANSWER 46 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1980:403284 HCAPLUS
DN 93:3284
TI Determination of high density lipoprotein-**cholesterol**
AU Momose, Tsuneaki; Nakamura, Yukari; Kabazawa, Keigo; Takizawa, Tokumasa
CS Ogata Med. Chem. Res. Inst., Japan
SO Kenkyu Hokoku - Ogata Igaku Kagaku Kenkyusho (1978) 32-46
CODEN: OIKHDE
DT Journal
LA Japanese
CC **9-4** (**Biochemical Methods**)
AB **Blood serum** was treated with polyanions (heparin, phosphotungstic acid, dextran sulfate, etc.) in the presence of divalent metal **ions**, and the mixt. was centrifuged to give a supernatant contg. high-d. lipoproteins. The supernatant was treated with **cholesterol esterase**, and the **cholesterol** released, was treated further with **cholesterol oxidase** to form .DELTA.4-cholesterone and H2O2. The H2O2 formed was reacted with N,N-diethyl-m-toluidine and 4-aminoantipyrine in the presence of

peroxidase, and the reaction mixt. was analyzed spectrometrically at 545 nm. The best results were obtained by the treatment of **blood serum** with a reagent contg. 0.1% dextran sulfate and 0.4M MgCl2. Incubation temp. (4, 30, or 37.degree.) and incubation time (5 min-overnight) had little or no effect on the detn. The results found by this method correlated pos. with those detd. by other methods, and reproducibility with a relative std. deviation of 0.51-1.13% was obtained.

ST **serum** lipoprotein **cholesterol** detn; enzymic spectrometry **cholesterol** lipoprotein

IT **Blood analysis**
(**cholesterol** detn. in high-d. lipoproteins in, enzymic-spectrometric)

IT **Lipoproteins**
RL: ANST (Analytical study)
(high-d., of **blood serum**, **cholesterol** detn. in, enzymic-spectrometric)

IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in **serum** high-d. lipoproteins, enzymic-spectrometric)

IT 9005-49-6, biological studies 9042-14-2 12067-99-1
RL: BIOL (Biological study)
(in **cholesterol** enzymic-spectrometric detn in **serum** high-d. lipoproteins)

L50 ANSWER 47 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1979:589311 HCAPLUS
DN 91:189311
TI Clinical procedure for measuring lipoprotein free **cholesterols**
IN Golias, Tipton L.
PA Helena Laboratories Corp., USA
SO U.S., 4 pp. Cont.-in-part of U.S. 4,105,521.
CODEN: USXXAM
DT Patent
LA English
IC G01N027-26; G01N033-16
NCL 204180000S
CC **9-3** (**Biochemical Methods**)
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4167467	A	19790911	US 1978-928044	19780726
	US 4105521	A	19780808	US 1977-835387	19770921
	GB 2026686	A	19800206	GB 1979-12870	19790411
PRAI	US 1977-835387		19770921		
	US 1978-928044		19780726		
	US 1978-928049		19780726		

AB An electrophoretic method is described for the direct and simultaneous measurement of high-d. lipoprotein (HDL), very-low-d. lipoprotein (VLDL), and low-d. lipoprotein (LDL) free **cholesterol** in body fluids. The procedure eliminates pptn. of each fraction as required by prior methods. Thus, a small sample of body fluid (**blood serum** or **plasma**) is applied to an electrophoretic support medium, esp. a cellulose acetate strip, and a d.c. current is applied across the support medium for a predetd. time to sep. the HDL, VLDL, and LDL fraction of **cholesterol** on the strip. Next, a sensitive reagent system, esp. contg. **cholesterol oxidase**, is applied to the sepd. fractions to detect the **cholesterol**, which then may be quantitated by densitometry or by elution and spectrometry.

ST lipoprotein **cholesterol** detn; electrophoresis lipoprotein **cholesterol** detn; **blood** lipoprotein **cholesterol** detn

IT **Blood analysis**
(**cholesterol** detn. in lipoprotein fractions in, by electrophoresis)

IT Electrophoresis and **Ionophoresis**
(in **cholesterol** detn. in lipoprotein fractions)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(high-d., **cholesterol** detn. in, by electrophoresis)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(low-d., **cholesterol** detn. in, by electrophoresis)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(very-low-d., **cholesterol** detn. in, by electrophoresis)
IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in lipoprotein fractions, by electrophoresis)

L50 ANSWER 48 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1979:117400 HCAPLUS
DN 90:117400
TI Nephelometry of apolipoprotein B in human **serum**
AU Heuck, Claus C.; Schlierf, Guenther
CS Klin. Inst. Herzinfarktforsch., Heidelberg, Ger.
SO Clin. Chem. (Winston-Salem, N. C.) (1979), 25(2), 221-6
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
CC **9-4** (**Biochemical Methods**)
AB The development of light scattering was studied in the reaction between anti-apolipoprotein B and apolipoprotein B in intact very-low-d. lipoproteins (I) and low-d. lipoproteins (II), as well as in lipoproteins treated with lipases, and considerable differences were found in the kinetics of the immunoreaction for the 2 lipoprotein classes. Pre-incubation with triglyceride lipase and **cholesterol esterase** caused a decrease of final light scattering in I, but only minimal changes in the reaction with II. **Nonionic** detergent not only decreased the original light scattering in hyperlipemic **serum** samples, but also accelerated the immunoreaction. Under standardized conditions, results of quant. nephelometry correlated highly significantly with quant. detn. of apolipoprotein B by radial immunodiffusion, both for normolipemic and hyperlipoproteinemic **serum** samples. The nonspecific light scattering caused by neutral lipids in intact lipoproteins could be minimized when samples were pre-incubated with lipolytic enzymes.
ST **serum** apolipoprotein B nephelometry; immunoassay apolipoprotein B
IT **Blood analysis**
(apolipoprotein B detn. in, by immunoassay-nephelometry)
IT Antibodies
RL: ANST (Analytical study)
(to apolipoprotein B, in immunoassay-nephelometry)
IT **Lipoproteins**
RL: ANT (Analyte); ANST (Analytical study)
(apo-, B, detn. of, in **blood serum** by immunoassay-nephelometry)
IT **Lipoproteins**
RL: ANST (Analytical study)
(low-d., apolipoprotein B of, detn. in **blood serum**)
IT **Lipoproteins**
RL: ANST (Analytical study)
(very-low-d., apolipoprotein B of, detn. in **blood serum**)
IT 151-21-3, uses and miscellaneous 9001-62-1 **9026-00-0**
RL: USES (Uses)
(in apolipoprotein B detn.)

L50 ANSWER 49 OF 49 HCAPLUS COPYRIGHT 2001 ACS
AN 1979:36038 HCAPLUS

DN 90:36038
TI Clinical procedure for measuring lipoprotein **cholesterols**
IN Golias, Tipton
PA Helena Laboratories Corp., USA
SO U.S., 4 pp.
CODEN: USXXAM
DT Patent
LA English
IC G01N027-26
NCL 204180000S
CC **9-3** (**Biochemical Methods**)
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4105521	A	19780808	US 1977-835387	19770921
	CA 1096757	A1	19810303	CA 1978-303836	19780523
	JP 54048296	A2	19790416	JP 1978-68713	19780607
	US 4147606	A	19790403	US 1978-928049	19780726
	US 4167467	A	19790911	US 1978-928044	19780726
	BR 7805044	A	19790529	BR 1978-5044	19780807
	DE 2840680	A1	19790322	DE 1978-2840680	19780919
	GB 2004915	A	19790411	GB 1978-37413	19780920
	FR 2404222	A1	19790420	FR 1978-27051	19780921
	FR 2404222	B1	19820129		
PRAI	US 1977-835387		19770921		

AB An electrophoretic method was developed for sepg. and detg. high-d., low-d., and very-low-d. lipoprotein (HDL, LDL, and VLDL, resp.) **cholesterol** in body fluids. Thus, a small sample of body fluid was applied to a cellulose acetate support medium, and treated with 180 V d.c. for .apprx.20 min, sepg. HDL, VLDL, and LDL **cholesterol** in that order. The sepd. sample was incubated with **cholesterol oxidase**-esterase reagent for 15 min at 37.degree., and the lipoprotein **cholesterols** were stained red-brown. Quantitation can be by any known means.
ST **blood** lipoprotein **cholesterol** detn; electrophoresis lipoprotein **blood**
IT **Blood analysis**
(lipoprotein **cholesterol** detn. in, electrophoretic method for)
IT Electrophoresis and **Ionophoresis**
(of lipoproteins, **cholesterol** detn. in, on cellulose acetate)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(high-d., **cholesterol** detn. in, of **blood**, electrophoretic)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(low-d., **cholesterol** detn. in, of **blood**, electrophoretic)
IT **Lipoproteins**
RL: AMX (Analytical matrix); ANST (Analytical study)
(very-low-d., **cholesterol** detn. in, of **blood**, electrophoretic)
IT **57-88-5**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in **blood** lipoproteins by electrophoresis)

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=> d all tot

L84 ANSWER 1 OF 19 MEDLINE
AN **2001379158** MEDLINE
DN 21329154 PubMed ID: 11436206
TI Direct measurement of HDL cholesterol: method eliminating apolipoprotein E-rich particles.
AU Okada M; Matsui H; Ito Y; Fujiwara A
CS Department of Laboratory Medicine, Niigata University School of Medicine, Niigata City, Japan.. okadar@med.niigata-u.ac.jp
SO JOURNAL OF CLINICAL LABORATORY ANALYSIS, (2001) 15 (4) 223-9.
Journal code: JLA; 8801384. ISSN: 0887-8013.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200109
ED Entered STN: 20010910
Last Updated on STN: 20010910
Entered Medline: 20010906
AB It has been reported that the existing direct method of high density lipoprotein (HDL) cholesterol measures particles enriched with apolipoprotein E (apoE). The aim of our study was to investigate a new analytical protocol to directly measure HDL cholesterol that eliminates apoE-rich particles. The interactions of four lipoproteins (HDL(3), HDL(2), LDL, and VLDL + chylomicron) with surfactants, divalent cations, sugars, and lectins were investigated. By analyzing sera, HDL(3), and HDL(2), we examined the relationships among the measurements obtained by our protocol, a precipitation method using heparin-MnCl(2), and a commercially available kit for this direct method. A significant difference was found between the direct method and the heparin-MnCl(2) method, but not between our protocol and the heparin-MnCl(2) method. Multiple regression analysis showed that the difference between the direct method and the heparin MnCl(2) method is dependent on sources of apoE-rich HDL. In conclusion, our protocol enables a direct measurement of HDL cholesterol that eliminates apoE-rich particles. Copyright 2001 Wiley-Liss, Inc.
CT Check Tags: Comparative Study; Human
*Apolipoproteins E: BL, blood
Catalase
Cations, Divalent
Chlorides
Cholesterol Esterase
Chromatography, High Pressure Liquid
Chylomicrons: BL, blood
Heparin
Indicators and Reagents
Lectins
Lipoproteins, HDL: BL, blood
***Lipoproteins, HDL Cholesterol: BL, blood**

Lipoproteins, LDL: BL, blood
Lipoproteins, VLDL: BL, blood
Magnesium Chloride
Manganese Compounds
Precipitation
Quality Control
Regression Analysis
Saccharomyces cerevisiae: EN, enzymology
Sensitivity and Specificity
Surface-Active Agents

RN 7773-01-5 (manganese chloride); 7786-30-3 (Magnesium Chloride); 9005-49-6 (Heparin)
CN 0 (Apolipoproteins E); 0 (Cations, Divalent); 0 (Chlorides); 0 (Chylomicrons); 0 (Indicators and Reagents); 0 (Lectins); 0 (Lipoproteins, HDL); 0 (Lipoproteins, HDL Cholesterol); 0 (Lipoproteins, LDL); 0 (Lipoproteins, VLDL); 0 (Manganese Compounds); 0 (Surface-Active Agents); 0 (high density lipoprotein-2); 0 (high density lipoprotein-3); EC 1.11.1.6 (Catalase); **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 2 OF 19 MEDLINE
AN **2001029596** MEDLINE
DN 20521623 PubMed ID: 11067827
TI Evaluation of a homogeneous direct LDL-cholesterol assay in diabetic patients: effect of glycemic control.
AU Ragland B D; Konrad R J; Chaffin C; Robinson C A; Hardy R W
CS Department of Pathology, University of Alabama at Birmingham, Birmingham, AL 35294, USA.
SO CLINICAL CHEMISTRY, (2000 Nov) 46 (11) 1848-51.
Journal code: DBZ. ISSN: 0009-9147.
CY United States
DT (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200011
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001121
CT Check Tags: Human
Cholesterol Esterase
Cholesterol Oxidase
Detergents
*Diabetes Mellitus: BL, blood
Fasting
***Lipoproteins, LDL Cholesterol: BL, blood**
Reagent Kits, Diagnostic
Spectrophotometry
CN 0 (Detergents); 0 (Lipoproteins, LDL Cholesterol); 0 (Reagent Kits, Diagnostic); **EC 1.1.3.6 (Cholesterol Oxidase); EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 3 OF 19 MEDLINE
AN **1999056366** MEDLINE
DN 99056366 PubMed ID: 9838987
TI Amperometric determination of high-density lipoprotein cholesterol using polyethylene glycol-modified enzymes and a peroxidase-entrapped electrode.
AU Kinoshita H; Torimura M; Kano K; Ikeda T
CS Kwassui Women's College, Nagasaki, Japan.
SO ANNALS OF CLINICAL BIOCHEMISTRY, (1998 Nov) 35 (Pt 6) 739-44.
Journal code: 52Y; 0324055. ISSN: 0004-5632.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199902
ED Entered STN: 19990316

Last Updated on STN: 19990316
Entered Medline: 19990226

AB A peroxidase-entrapped and ferrocene-embedded carbon paste (POD-Fc-CP) electrode allows a highly sensitive detection of H2O2 at levels as low as 10 nmol/L with practically no interference by coexisting substances, turbidity or coloration of samples. The electrode was applied to the amperometric determination of high-density lipoprotein (HDL)-cholesterol in a very small volume (1-2 microL) using polyethylene glycol (PEG)-modified **cholesterol esterase** and **cholesterol oxidase** without prior precipitation or separation of HDL. PEG-modified enzymes exhibit a selective activity toward HDL-cholesterol in the presence of dextran sulphate and MgCl2 to generate H2O2. The HDL-cholesterol concentrations of human serum samples determined by this method showed a good correlation with those determined by an ordinary spectrophotometric method using PEG-modified enzymes and peroxidase or by a conventional precipitation method.

CT Check Tags: Comparative Study; Human
Electrochemistry
*Enzymes, Immobilized: CH, chemistry
***Lipoproteins, HDL Cholesterol: BL, blood**
*Peroxidases: CH, chemistry
***Polyethylene Glycols: CH, chemistry**
Sensitivity and Specificity
Spectrum Analysis

CN 0 (Enzymes, Immobilized); 0 (Lipoproteins, HDL Cholesterol); 0 (Polyethylene Glycols); EC 1.11.1. (Peroxidases)

L84 ANSWER 4 OF 19 MEDLINE
AN **1998353113** MEDLINE
DN 98353113 PubMed ID: 9690803
TI The association of factor VIIa, factor XIIa and beta2-glycoprotein-1 with triglyceride-rich lipoproteins in normolipidaemic subjects.
AU Cardigan R A; Donohoe S; Purdy G; Mackie I J; Machin S J
CS Department of Haematology, University College London Medical School, UK.. r.cardigan@ucl.ac.uk
SO BLOOD COAGULATION AND FIBRINOLYSIS, (1998 Jun) 9 (4) 323-32.
Journal code: A5J; 9102551. ISSN: 0957-5235.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199810
ED Entered STN: 19981029
Last Updated on STN: 19981029
Entered Medline: 19981021

AB The activation of factors XII (FXII) and VII (FVII) has been shown to occur on the surface of lipoproteins in the presence of **lipoprotein lipase** and may be modulated by beta2glycoprotein-1 (beta2GP1). In the postprandial state FVII is activated without apparent activation of FXII in plasma. We investigated whether beta2GP1, FXIIa and FVIIa are associated with triglyceride-rich lipoproteins in the fasting and postprandial state. Six normal subjects were studied while fasting and 1, 2 and 4 h after ingestion of 100 g fat. We confirmed that plasma FVIIa activity, but not FXIIa antigen, was increased in the postprandial period. FXIIa, FVIIa and beta2GP1 were associated with chylomicra-rich lipoproteins, and lipase or Triton X-100 treatment caused an increase in FXIIa in plasma and chylomicra without an increase in FVIIa. This suggests that FXIIa may be formed in the postprandial period, but its antigenic determinants are masked by the association with lipoprotein particles, although it could still express proteolytic activity. Alternatively a FXII-independent mechanism or surface other than triglyceride-rich lipoproteins may be responsible for FVII activation in the postprandial state.

CT Check Tags: Human
Chylomicrons: BL, blood
Chylomicrons: DE, drug effects

Chylomicrons: IP, isolation & purification
*Factor VIIa: AN, analysis
Factor VIIa: DE, drug effects
*Factor XIIa: AN, analysis
Factor XIIa: DE, drug effects
Fasting: BL, blood
*Glycoproteins: BL, blood
Glycoproteins: DE, drug effects
Lipase: PD, pharmacology
***Lipoproteins: BL, blood**
Lipoproteins: CH, chemistry
Lipoproteins: DE, drug effects
Membrane Glycoproteins: BL, blood
Membrane Glycoproteins: DE, drug effects
Polyethylene Glycols: PD, pharmacology
Postprandial Period: PH, physiology
Reference Values
*Triglycerides: BL, blood
CN 0 (Chylomicrons); 0 (Glycoproteins); 0 (Lipoproteins); 0 (Membrane Glycoproteins); 0 (Polyethylene Glycols); 0 (Triglycerides); 0 (beta 2-glycoprotein I); EC 3.1.1.3 (Lipase); EC 3.4.21.21 (Factor VIIa); EC 3.4.21.38 (Factor XIIa)

L84 ANSWER 5 OF 19 MEDLINE
AN **1998213152** MEDLINE
DN 98213152 PubMed ID: 9554489
TI Reference standardization and triglyceride interference of a new homogeneous HDL-cholesterol assay compared with a former chemical precipitation assay.
AU Cobbaert C; Zwang L; Ceriotti F; Modenese A; Cremer P; Herrmann W; Hoss G; Jarausch J; Turk R; Marz W; Nauck M
CS Academic Hospital Rotterdam, The Netherlands.. boersma@ckcl.azr.nl
SO CLINICAL CHEMISTRY, (1998 Apr) 44 (4) 779-89.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(MULTICENTER STUDY)
LA English
FS Priority Journals
EM 199804
ED Entered STN: 19980430
Last Updated on STN: 19980430
Entered Medline: 19980423
AB A homogeneous HDL-c assay (HDL-H), which uses polyethylene glycol-modified enzymes and sulfated alpha-cyclodextrin, was assessed for precision, accuracy, and cholesterol and triglyceride interference. In addition, its analytical performance was compared with that of a phosphotungstic acid (PTA)/MgCl2 precipitation method (HDL-P). Within-run CVs were < or = 1.87%; total CVs were < or = 3.08%. Accuracy was evaluated in fresh normotriglyceridemic sera using the Designated Comparison Method (HDL-H = 1.037 Designated Comparison Method + 4 mg/L; n = 63) and in moderately hypertriglyceridemic sera by using the Reference Method (HDL-H = 1.068 Reference Method - 17 mg/L; n = 41). Mean biases were 4.5% and 2.2%, respectively. In hypertriglyceridemic sera (n = 85), HDL-H concentrations were increasingly positively biased with increasing triglyceride concentrations. The method comparison between HDL-H and HDL-P yielded the following equation: HDL-H = 1.037 HDL-P + 15 mg/L; n = 478. We conclude that HDL-H amply meets the 1998 NCEP recommendations for total error; its precision is superior compared with that of HDL-P, and its average bias remains below +/-5% as long as triglyceride concentrations are < or = 10 g/L and in case of moderate hypercholesterolemia.
CT Check Tags: Comparative Study; Human
Cholesterol: BL, blood
Cholesterol Esterase
Cholesterol Oxidase

Cyclodextrins
Hyperlipidemia: BL, blood
***Lipoproteins, HDL Cholesterol: BL, blood**
Magnesium Chloride
Phosphotungstic Acid
Polyethylene Glycols
Precipitation
Reference Standards
Regression Analysis
*Triglycerides: BL, blood
Ultracentrifugation

RN 12067-99-1 (Phosphotungstic Acid); 57-88-5 (Cholesterol); 7786-30-3 (Magnesium Chloride)
CN 0 (Cyclodextrins); 0 (Lipoproteins, HDL Cholesterol); 0 (Polyethylene Glycols); 0 (Triglycerides); **EC 1.1.3.6 (Cholesterol Oxidase)**; **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 6 OF 19 MEDLINE
AN **1998171846** MEDLINE
DN 98171846 PubMed ID: 9510857
TI Homogeneous assay for measuring low-density lipoprotein cholesterol in serum with triblock copolymer and alpha-cyclodextrin sulfate.
AU Sugiuchi H; Irie T; Uji Y; Ueno T; Chaen T; Uekama K; Okabe H
CS Department of Central Laboratory, Kumamoto University Hospital, Japan.. sugiuchi@gpo.kumamoto-u.ac.jp
SO CLINICAL CHEMISTRY, (1998 Mar) 44 (3) 522-31.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199804
ED Entered STN: 19980416
Last Updated on STN: 19980416
Entered Medline: 19980407
AB We have developed a fully automated method for measuring LDL-cholesterol (LDL-C) in human serum without the need for prior separation, using a **nonionic surfactant**, polyoxyethylene-polyoxypropylene block copolyether (POE-POP), and a sodium salt of sulfated cyclic maltohexaose, alpha-cyclodextrin sulfate. Of the **surfactants** tested, POE-POP with a higher molecular mass of the POP block and a greater hydrophobicity reduced the reactivity of cholesterol in lipoprotein fractions; the reactivity in descending order was LDL >> VLDL > chylomicron approximately HDL. Gel filtration chromatographic studies revealed that POE-POP removed lipids selectively from the LDL fraction and allowed them to participate in the **cholesterol esterase -cholesterol oxidase** coupling reaction system. By contrast, alpha-cyclodextrin sulfate reduced the reactivity of cholesterol, especially in chylomicrons and VLDL. A combination of POE-POP with alpha-cyclodextrin sulfate provided the required selectivity for the determination of LDL-C in serum in the presence of magnesium **ions** and a small amount of dextran sulfate without precipitating lipoprotein aggregates. There was a good correlation between the results of LDL-C assayed by the proposed method and the beta-quantification reference method involving 161 sera with triglyceride concentrations ranging from 0.3 to 22.6 mmol/L.
CT Check Tags: Human
Automation: MT, methods
Cholesterol: BL, blood
Cholesterol Esterase
Cholesterol Oxidase
Chromatography, Gel: MT, methods
Cyclodextrins
Hyperlipidemia: BL, blood
Indicators and Reagents
Lipoproteins, HDL: BL, blood

Lipoproteins, HDL: IP, isolation & purification
Lipoproteins, LDL: BL, blood
Lipoproteins, LDL: IP, isolation & purification
***Lipoproteins, LDL Cholesterol: BL, blood**
Lipoproteins, VLDL: BL, blood
Lipoproteins, VLDL: IP, isolation & purification
Phospholipids: BL, blood
Poloxalene
Pseudomonas: EN, enzymology
Reference Values
Reproducibility of Results
Sensitivity and Specificity
Surface-Active Agents
Triglycerides: BL, blood

RN 10016-20-3 (alpha-cyclodextrin); 57-88-5 (Cholesterol); 9003-11-6 (Poloxalene)

CN 0 (Cyclodextrins); 0 (Indicators and Reagents); 0 (Lipoproteins, HDL); 0 (Lipoproteins, LDL); 0 (Lipoproteins, LDL Cholesterol); 0 (Lipoproteins, VLDL); 0 (Phospholipids); 0 (**Surface-Active Agents**); 0 (Triglycerides); **EC 1.1.3.6 (Cholesterol Oxidase)**; **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 7 OF 19 MEDLINE
AN **97334894** MEDLINE
DN 97334894 PubMed ID: 9191560
TI Evaluation of two homogeneous methods for measuring high-density lipoprotein cholesterol.
AU Huang Y C; Kao J T; Tsai K S
CS Department of Laboratory Medicine, Municipal Ho-Pin Hospital, Taipei, Taiwan, R.O.C.
SO CLINICAL CHEMISTRY, (1997 Jun) 43 (6 Pt 1) 1048-55.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199707
ED Entered STN: 19970724
Last Updated on STN: 19970724
Entered Medline: 19970714

AB We evaluated the performance of two homogeneous assays for quantifying HDL cholesterol (HDL-C) and compared them with the phosphotungstic acid (PTA)/MgCl2 assay. Both homogeneous HDL-C assays were precise, having a within-run CV of < 1.20% and a between-run CV of < 4.07%. The HDL-C values (y) measured by the two homogeneous methods correlated well with those by the PTA/MgCl2 method (x): y = 1.00x + 64.98 mg/L, r = 0.987, Sy/x = 27.99 mg/L (n = 152) for the polyethylene glycol-modified enzymes/alpha-cyclodextrin sulfate (PEGME) assay (Kyowa), and y = 0.84x + 106.51 mg/L, r = 0.984, Sy/x = 26.10 mg/L (n = 152) for the polyanion-polymer/detergent (PPD) assay (Daiichi). The specificity of the PEGME method seemed better than that of the PPD method, as the PPD method was markedly interfered with by supplemental LDL-C. Addition of 20 g/L triglycerides produced a negative error of approximately 18% in both homogeneous assays. Bilirubin and hemoglobin had little influence on the PEGME method; hemoglobin had little effect on the PPD method. Bilirubin, however, markedly decreased the readings by the PPD method. We found the PEGME assay superior to the PPD assay for routine HDL-C testing, because the PPD assay is relatively inaccurate and not specific.

CT Check Tags: Comparative Study; Human
Bilirubin: BL, blood
Cholesterol Oxidase
Cyclodextrins
Detergents
Evaluation Studies
Hemoglobins: AN, analysis
Linear Models

***Lipoproteins, HDL Cholesterol: BL, blood**
Magnesium Chloride
Peroxidases
Phosphotungstic Acid
Polyethylene Glycols
***Reagent Kits, Diagnostic**
Sensitivity and Specificity
Sulfates
Triglycerides: BL, blood

RN 10016-20-3 (alpha-cyclodextrin); 12067-99-1 (Phosphotungstic Acid); 635-65-4 (Bilirubin); 7786-30-3 (Magnesium Chloride)

CN 0 (Cyclodextrins); 0 (Detergents); 0 (Hemoglobins); 0 (Lipoproteins, HDL Cholesterol); 0 (Polyethylene Glycols); 0 (Reagent Kits, Diagnostic); 0 (Sulfates); 0 (Triglycerides); **EC 1.1.3.6 (Cholesterol Oxidase)**; EC 1.11.1. (Peroxidases)

L84 ANSWER 8 OF 19 MEDLINE
AN **97013877** MEDLINE
DN 97013877 PubMed ID: 8860712
TI Short- and long-term effects on serum lipoproteins by three different techniques of apheresis.
AU Richter W O; Donner M G; Schwandt P
CS Medical Department II, Klinikum Grosshadern, Ludwig-Maxmilians-University of Munich, Germany.
SO ARTIFICIAL ORGANS, (1996 Apr) 20 (4) 311-7.
Journal code: 8ZK; 7802778. ISSN: 0160-564X.
CY United States
DT (CLINICAL TRIAL)
(CONTROLLED CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199705
ED Entered STN: 19970514
Last Updated on STN: 19980206
Entered Medline: 19970508

AB Low-density lipoprotein (LDL) apheresis is applied in patients with coronary heart disease because of severe inherited forms of hypercholesterolemia, for which dietary and combined drug treatment cannot lower LDL cholesterol concentrations less than 130 mg/dl. The following article describes the changes in lipoprotein levels in a total of 19 patients undergoing weekly LDL apheresis. Immunoadsorption, operating with polyclonal antibodies against apolipoprotein B-100, was used in 6 patients. Five patients were put on heparin-induced extracorporeal LDL precipitation (HELP) therapy; 6 received dextran sulfate adsorption treatments. Under steady-state conditions a single treatment reduced LDL cholesterol by 149 + or - 3 mg/dl with immunoadsorption, 122 + or - 2 mg/dl with HELP, and 124 + or - 18 mg/dl with dextran sulfate adsorption. Lipoprotein (a) (Lp[a]) declined by 52 to 65%. Very low density lipoprotein (VLDL) cholesterol and VLDL triglycerides declined by 45 to 55% because of the activation of **lipoprotein lipase** and precipitation during the HELP procedure. In all procedures, there was a small reduction in the different high-density lipoprotein fractions, which had returned to normal after 24 h. The long-term HDL3 cholesterol levels increased significantly. During all procedures there was a decrease in the molar esterification rate of lecithin cholesterol acyltransferase activity. All changes in lipid fractions were paralleled by changes in the corresponding apolipoprotein levels. It is concluded that all three techniques described are powerful tools capable of lowering LDL cholesterol in severe hereditary forms of hypercholesterolemia. In HELP and dextran sulfate adsorption, the amount of plasma is limited by the elimination of other plasma constituents. Immunoadsorption may thus be preferred in very severe forms of hypercholesterolemia.

CT Check Tags: Human
Acyl Coenzyme A: AI, antagonists & inhibitors
Adsorption

Apolipoproteins A: BL, blood
Apolipoproteins A: IP, isolation & purification
Coronary Angiography
Dextran Sulfate: CH, chemistry
Dextran Sulfate: ME, metabolism
*Hypercholesterolemia, Familial: TH, therapy
Immunosorbents
Lipoproteins, LDL Cholesterol: BL, blood
***Lipoproteins, LDL Cholesterol: IP, isolation & purification**
Lipoproteins, VLDL Cholesterol: BL, blood
***Lipoproteins, VLDL Cholesterol: IP, isolation & purification**
Phosphatidylcholine-Sterol O-Acyltransferase: BL, blood
*Plasmapheresis: MT, methods
Plasmapheresis: ST, standards

RN 1553-55-5 (3-hydroxy-3-methylglutaryl-coenzyme A); 9042-14-2 (Dextran Sulfate)
CN 0 (Acyl Coenzyme A); 0 (Apolipoproteins A); 0 (Immunosorbents); 0 (Lipoproteins, LDL Cholesterol); 0 (Lipoproteins, VLDL Cholesterol); EC 2.3.1.43 (Phosphatidylcholine-Sterol O-Acyltransferase)

L84 ANSWER 9 OF 19 MEDLINE
AN **96234969** MEDLINE
DN 96234969 PubMed ID: 8639615
TI Bile salt stimulated **cholesterol esterase** increases uptake of high density lipoprotein-associated cholesteryl esters by HepG2 cells.
AU Li F; Huang Y; Hui D Y
CS Department of Pathology, University of Cincinnati College of Medicine, Ohio 45267-0529, USA.
NC DK40917 (NIDDK)
SO BIOCHEMISTRY, (1996 May 28) 35 (21) 6657-63.
Journal code: A0G; 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199607
ED Entered STN: 19960726
Last Updated on STN: 19970203
Entered Medline: 19960717
AB Bile salt stimulated **cholesterol esterase** is predominantly synthesized in the pancreas. However, this enzyme is also synthesized by the liver and was found to be present in plasma. The physiologic role of the systemic **cholesterol esterase** has not been clearly defined. In the current study, the human hepatoma cell line HepG2 was used as a model to determine the role of **cholesterol esterase** on hepatic uptake of high density lipoprotein (HDL)-associated cholesteryl esters. The results showed that hepatic uptake of the cholesteryl esters analog [3H]cholesteryl ether on reconstituted HDL was inhibited by anti-**cholesterol esterase** antibodies. The HDL-associated cholesteryl ester transported to HepG2 cells was also increased 2-fold in the presence of taurocholate, an activator of the **cholesterol esterase** . These results suggest that liver-derived **cholesterol esterase** may play an important role in cellular uptake of cholesteryl esters from HDL. This hypothesis was supported by demonstrating the ability of exogenously added **cholesterol esterase** to further enhance hepatic uptake of HDL-associated cholesteryl esters. The results of the current study also showed that **cholesterol esterase** increased free-to-esterified cholesterol ratio in the lipoprotein. Thus, alteration of HDL structure and composition contributes to the **cholesterol esterase** -induced cellular uptake of HDL-associated cholesteryl esters. On the basis of these observations, we propose that liver-derived **cholesterol esterase** may play an important role in lipoprotein metabolism.

CT Check Tags: Animal; Female; Human; Male; Support, U.S. Gov't, P.H.S.
Biological Transport
Carcinoma, Hepatocellular
Cell Line
***Cholesterol Esterase: ME, metabolism**
*Cholesterol Esters: ME, metabolism
Kinetics
Lipoproteins, HDL Cholesterol: IP, isolation & purification
***Lipoproteins, HDL Cholesterol: ME, metabolism**
Liver Neoplasms
Milk, Human: EN, enzymology
Pancreas: EN, enzymology
Rats
Rats, Sprague-Dawley
***Taurocholic Acid: PD, pharmacology**
Tritium
Tumor Cells, Cultured
RN 10028-17-8 (Tritium); 81-24-3 (Taurocholic Acid)
CN 0 (Cholesterol Esters); 0 (Lipoproteins, HDL Cholesterol); **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 10 OF 19 MEDLINE
AN 96128887 MEDLINE
DN 96128887 PubMed ID: 8590939
TI Automatic gas chromatographic determination of the high-density-lipoprotein cholesterol and total cholesterol in serum.
AU Cardenas M S; Ballesteros E; Gallego M; Valcarcel M
CS Department of Analytical Chemistry, Faculty of Sciences, University of Cordoba, Spain.
SO JOURNAL OF CHROMATOGRAPHY. B, BIOMEDICAL APPLICATIONS, (1995 Oct 6) 672 (1) 7-16.
Journal code: BXL; 9421796. ISSN: 0378-4347.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199604
ED Entered STN: 19960418
Last Updated on STN: 19960418
Entered Medline: 19960404
AB A new analytical method that combines on-line precipitation-filtration, enzymatic hydrolysis, extraction and gas chromatography was developed for the determination of total cholesterol and high-density-lipoprotein cholesterol in human serum. Very-low-density lipoprotein, intermediate-density lipoprotein and low-density lipoprotein are precipitated with sodium phosphotungstate and magnesium chloride; then, the serum is continuously filtered and unprecipitated high-density-lipoprotein cholesterol is enzymatically hydrolyzed and finally determined as cholesterol by gas chromatography. Total cholesterol is also determined by direct introduction of the serum into the proposed system. The proposed method was validated by analyzing a lipid control serum with certified contents of high-density-lipoprotein cholesterol and total cholesterol. The results obtained were consistent with the certified contents.
CT Check Tags: Human; Support, Non-U.S. Gov't
***Cholesterol: BL, blood**
Cholesterol Esterase
***Chromatography, Gas**
Enzymes, Immobilized
Hydrogen-Ion Concentration
Hydrolysis
Indicators and Reagents
***Lipoproteins, HDL Cholesterol: BL, blood**
Magnesium Chloride
Phosphotungstic Acid
Temperature
RN 12067-99-1 (Phosphotungstic Acid); 57-88-5 (Cholesterol); 7786-30-3

(Magnesium Chloride)
CN 0 (Enzymes, Immobilized); 0 (Indicators and Reagents); 0 (Lipoproteins, HDL Cholesterol); **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 11 OF 19 MEDLINE
AN **95246336** MEDLINE
DN 95246336 PubMed ID: 7729051
TI Direct measurement of high-density lipoprotein cholesterol in serum with polyethylene glycol-modified enzymes and sulfated alpha-cyclodextrin.
CM Comment in: Clin Chem. 1995 Dec;41(12 Pt 1):1784
AU Sugiuchi H; Uji Y; Okabe H; Irie T; Uekama K; Kayahara N; Miyauchi K
CS Department of Laboratory Medicine, Kumamoto University Medical School, Japan.
SO CLINICAL CHEMISTRY, (1995 May) 41 (5) 717-23.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199505
ED Entered STN: 19950608
Last Updated on STN: 19960404
Entered Medline: 19950530
AB We have developed an automated method for measuring high-density lipoprotein (HDL)-cholesterol in serum without prior separation, using polyethylene glycol (PEG)-modified enzymes and sulfated alpha-cyclodextrin. When **cholesterol esterase** and **cholesterol oxidase** enzymes were modified with PEG, they showed selective catalytic activities towards lipoprotein fractions, with the reactivity increasing in the order: low-density lipoprotein < very-low-density lipoprotein approximately chylomicron < HDL. In the presence of magnesium ions, alpha-cyclodextrin sulfate reduced the reactivity of cholesterol, especially in chylomicrons and very-low-density lipoprotein, without the need for precipitation of those lipoprotein fractions. The combination of PEG-modified enzymes with alpha-cyclodextrin sulfate provided selectivity for the determination of HDL-cholesterol in serum in the presence of a small amount of dextran sulfate without the need for precipitation of lipoprotein aggregates. The results of the HDL-cholesterol assayed in serum by this direct method correlated well with those obtained by precipitation-based methods and also that by an ultracentrifugation method.
CT Check Tags: Female; Human; Male
Adult
***Cholesterol Esterase: ME, metabolism**
***Cholesterol Oxidase: ME, metabolism**
*Cyclodextrins: PD, pharmacology
Hydrogen-Ion Concentration
Indicators and Reagents
***Lipoproteins, HDL Cholesterol: BL, blood**
Middle Age
***Polyethylene Glycols: PD, pharmacology**
Quality Control
Reference Values
Sensitivity and Specificity
CN 0 (Cyclodextrins); 0 (Indicators and Reagents); 0 (Lipoproteins, HDL Cholesterol); 0 (Polyethylene Glycols); **EC 1.1.3.6 (Cholesterol Oxidase); EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 12 OF 19 MEDLINE
AN 93161539 MEDLINE
DN 93161539 PubMed ID: 8432016
TI Multicenter evaluation of Reflotron direct dry-chemistry assay of high-density lipoprotein cholesterol in venous and fingerstick specimens.
AU Warnick G R; Boerma G J; Assmann G; Endler A T; Gerique G; Gotto A M; Graziani M S; Lippi U; Patsch W; Riesen W F; +
CS Pacific Biometrics, Inc., Seattle, WA 98109.

SO CLINICAL CHEMISTRY, (1993 Feb) 39 (2) 271-7.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199303
ED Entered STN: 19930402
Last Updated on STN: 19970203
Entered Medline: 19930318
AB The Reflotron HDL Cholesterol test (Boehringer Mannheim GmbH) directly separates and analyzes high-density lipoprotein (HDL) cholesterol in plasma collected with EDTA in an integrated dry-reagent system suitable for alternative site testing of lipoproteins. We describe a multicenter evaluation of this test by two US and six European laboratories experienced in lipid analysis. Each laboratory compared the Reflotron with the same conventional wet-chemistry method, Boehringer phosphotungstate-Mg2+ precipitation with enzymatic cholesterol assay. Imprecision was within accepted guidelines, with CVs of < or = 8% for fresh and frozen plasmas (median CV 1.7-3.9%) and for lyophilized sera (median CV 3.8-4.7%), similar to those of the conventional method. Results of linear-regression analysis were as follows: Reflotron HDL Cholesterol = 1.03 conventional - 3.9 mg/L, r = 0.987. The Reflotron results were somewhat low in the two US laboratories, demonstrating the need for general standardization of methods for measuring HDL cholesterol. Results from capillary fingerstick plasma agreed well with those from venous-derived plasma; capillary = 1.04 venous + 4.5 mg/L, r = 0.967. The system is relatively insensitive to interference from hemoglobin (< or = 0.75 g/L), ascorbic acid (< or = 0.3 g/L), bilirubin (< or = 50 mg/L), cholesterol (< or = 3.5 g/L), and triglycerides (< or = 4 g/L). The relative ease of operation and the rapid availability of results (within 90 s for plasma collected in EDTA) make the method appropriate for use by well-trained, but not necessarily technical, operators in the physician's office or other alternative sites.
CT Check Tags: Comparative Study; Human; Support, Non-U.S. Gov't
Aminopyrine
Capillaries
Cholesterol Oxidase
Edetic Acid
Evaluation Studies
***Lipoproteins, HDL Cholesterol: BL, blood**
Magnesium
Phosphotungstic Acid
Photometry
Precipitation
Quality Control
***Reagent Kits, Diagnostic**
Reagent Kits, Diagnostic: ST, standards
Reagent Kits, Diagnostic: SN, statistics & numerical data
Regression Analysis
Veins
RN 12067-99-1 (Phosphotungstic Acid); 58-15-1 (Aminopyrine); 60-00-4 (Edetic Acid); 7439-95-4 (Magnesium)
CN 0 (Lipoproteins, HDL Cholesterol); 0 (Reagent Kits, Diagnostic); **EC 1.1.3.6 (Cholesterol Oxidase)**

L84 ANSWER 13 OF 19 MEDLINE
AN **88328050** MEDLINE
DN 88328050 PubMed ID: 2843306
TI Enzymic determination of the free cholesterol fraction of high-density lipoprotein in plasma with use of 2,4,6-tribromo-3-hydroxybenzoic acid.
CM Erratum in: Clin Chem 1989 Apr;35(4):670
AU Moshides J S
CS Department of Clinical Chemistry, Prince of Wales Hospital, Randwick, N.S.W., Australia.
SO CLINICAL CHEMISTRY, (1988 Sep) 34 (9) 1799-804.

Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198810
ED Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19881026
AB A highly sensitive enzymic colorimetric reagent is described for determination of the free cholesterol fraction of high-density lipoprotein (HDL), which represents about 20% of the total cholesterol content of this lipoprotein. For greater sensitivity with respect to cholesterol, I used 2,4,6-tribromo-3-hydroxybenzoic acid instead of phenol in the **cholesterol oxidase**/peroxidase/4-aminoantipyrine reagent system. This allows determination of the free cholesterol fraction of HDL isolates prepared with polyethylene glycol 6000, a method for precipitating beta-lipoprotein that involves a twofold dilution of plasma. The reagent, adapted for use with a Cobas-Bio centrifugal analyzer, results in between-run and within-run CVs of less than 3% and a linearity to at least 400 mg of HDL free cholesterol per liter. Comparison with results by Trinder's cholesterol method, which measures cholest-4-en-3-one at 232 nm, showed good correlation (r = 0.9829, slope 1.0001, and y-intercept +2.4797 mg/L). With the manual procedure for HDL free cholesterol, between-batch and within-batch CVs were less than 5%, and results correlated well with those by the automated method (r = 0.9975, slope 0.9839, and y-intercept +2.4327 mg/L). The mean (and SD) HDL free cholesterol for 123 men was 96.8 (30.6) mg/L and for 122 women 136.4 (36.8) mg/L, indicating a distinct sex-related difference, similar to that found for HDL total cholesterol. HDL free cholesterol in plasma may therefore be a potential new predictor of coronary heart disease.
CT Check Tags: Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't
Adult
Aged
Ampyrone
Autoanalysis
***Cholesterol: BL, blood**
Cholesterol Oxidase
*Coronary Disease: BL, blood
Hydrogen-Ion Concentration
*Hydroxybenzoic Acids
***Lipoproteins, HDL Cholesterol: BL, blood**
Middle Age
Peroxidase
Polyethylene Glycols
Quality Control
Reference Values
Regression Analysis
Spectrophotometry
RN 14348-40-4 (2,4,6-tribromo-3-hydroxybenzoic acid); 57-88-5 (Cholesterol); 83-07-8 (Ampyrone)
CN 0 (Hydroxybenzoic Acids); 0 (Lipoproteins, HDL Cholesterol); 0 (Polyethylene Glycols); **EC 1.1.3.6 (Cholesterol Oxidase)**; EC 1.11.1.7 (Peroxidase)

L84 ANSWER 14 OF 19 MEDLINE
AN 87302285 MEDLINE
DN 87302285 PubMed ID: 3621604
TI Improved method for determination of high density lipoprotein cholesterol using a sensitive reagent and a centrifugal analyzer.
AU Moshides J S
SO CLINICA CHIMICA ACTA, (1987 Jul 15) 166 (2-3) 275-82.
Journal code: DCC; 1302422. ISSN: 0009-8981.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)

LA English
FS Priority Journals
EM 198710
ED Entered STN: 19900305
Last Updated on STN: 19970203
Entered Medline: 19871022
AB Enzymic measurement of high density lipoprotein cholesterol (HDL-c) using a sensitive reagent and a centrifugal analyser is described. The Boehringer Mannheim **cholesterol esterase**/oxidase reagent has been modified by the inclusion of 2,4,6-tri-bromo-3-hydroxybenzoic acid (TBHBA) which reacts with hydrogen peroxide and the 4-aminophenazone/peroxidase system to produce a quinone-imine dye with a four-fold greater molar absorptivity than that produced with phenol. The resulting reagent system has been developed for use with a centrifugal analyzer for the determination of plasma HDL fractions isolated with polyethylene glycol 6000, for which a reagent of high sensitivity is required. The method is linear to 4 mmol/l of HDL-c and between-run and within-run CVs ranged from 1.01-2.54%. Reagent costs are currently $US 0.12 per test and large numbers of assay samples can be processed rapidly and conveniently. The mean (+/- SD) HDL-c value for men was 1.09 (+/- 0.33) and for women, 1.35 (+/- 0.37) mmol/l.
CT Check Tags: Female; Human; Male; Support, Non-U.S. Gov't
Anthranilic Acids: DU, diagnostic use
Centrifugation
Cholesterol Esterase: DU, diagnostic use
Cholesterol Oxidase: DU, diagnostic use
Kinetics
***Lipoproteins, HDL Cholesterol: BL, blood**
***Reagent Kits, Diagnostic**
RN 82422-25-1 (thiobenzyl N-heptafluorobutyrylanthranilate)
CN 0 (Anthranilic Acids); 0 (Lipoproteins, HDL Cholesterol); 0 (Reagent Kits, Diagnostic); **EC 1.1.3.6 (Cholesterol Oxidase); EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 15 OF 19 MEDLINE
AN 83199521 MEDLINE
DN 83199521 PubMed ID: 6342279
TI [Determination of HDL-cholesterol].
Zur Bestimmung des HDL-Cholesterols.
AU Herrmann W; Schutz C; Reuter W
SO ZEITSCHRIFT FUR DIE GESAMTE INNERE MEDIZIN UND IHRE GRENZGEBIETE, (1983 Jan 1) 38 (1) 17-22. Ref: 40
Journal code: XUY; 21730470R. ISSN: 0044-2542.
CY GERMANY, EAST: German Democratic Republic
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LA German
FS Priority Journals
EM 198306
ED Entered STN: 19900318
Last Updated on STN: 19900318
Entered Medline: 19830610
AB For the clinical practice methods of the determination of HDL-cholesterol made their way which are based on the precipitation of apolipoprotein-B-containing lipoproteins and a determination of cholesterol following. The expensive methods of the ultracentrifugation serve as reference methods. The most-spread precipitation techniques (heparin/MCl2, dextran sulphate/CaCl2 or MgCl2 photungstic acid/MgCl2) are comparatively observed with regard to their effectiveness, practicability and methodical and technical conditions (influence of the concentration of the precipitation reagents, pH-value, temperature, incubation and centrifugation conditions). Results of own investigations as well as data from literature are presented to the problem of the harmonization of the cholesterol determination with the precipitation technique. According to the opinion of the authors for the enzymatic determination of cholesterol by means of the CHOD-PAP-method the phosphotungstic acid precipitation

well stood the test, whereas for the chemical determination of cholesterol after Liebermann-Burchard in manual or automatized works the precipitation by means of dextran sulphate/CaCl2 (40 g/l, 2.0 mol/l) is to be recommended. The superabundant precipitations with phosphotungstic acid and dextran sulphate/MgCl2 (20 g/l, 2.0 mol/l) achieve higher results in Liebermann-Burchard's reaction likely on account of interferences.

CT Check Tags: Comparative Study; Human
Catalase: AN, analysis
Centrifugation: MT, methods
***Cholesterol: BL, blood**
Cholesterol: IP, isolation & purification
Cholesterol Oxidase: AN, analysis
Enzyme Tests: MT, methods
Hydrogen-Ion Concentration
***Lipoproteins, HDL: BL, blood**
Lipoproteins, HDL: IP, isolation & purification
Lipoproteins, HDL Cholesterol
Lipoproteins, LDL: IP, isolation & purification
Lipoproteins, VLDL: IP, isolation & purification
Precipitation
Quality Control

RN 57-88-5 (Cholesterol)
CN 0 (Lipoproteins, HDL); 0 (Lipoproteins, HDL Cholesterol); 0 (Lipoproteins, LDL); 0 (Lipoproteins, VLDL); **EC 1.1.3.6 (Cholesterol Oxidase)**; EC 1.11.1.6 (Catalase)

L84 ANSWER 16 OF 19 MEDLINE
AN **82115769** MEDLINE
DN 82115769 PubMed ID: 7055975
TI **Surfactants** in enzymic reagents for determination of HDL-cholesterol.
AU Moshides J S
SO CLINICAL CHEMISTRY, (1982 Feb) 28 (2) 396.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Letter
LA English
FS Priority Journals
EM 198204
ED Entered STN: 19900317
Last Updated on STN: 19900317
Entered Medline: 19820422
CT Check Tags: Human
***Cholesterol: AN, analysis**
Cholesterol Esterase: DU, diagnostic use
***Lipoproteins, HDL: AN, analysis**
Lipoproteins, HDL Cholesterol
Surface-Active Agents
RN 57-88-5 (Cholesterol)
CN 0 (Lipoproteins, HDL); 0 (Lipoproteins, HDL Cholesterol); 0 (**Surface-Active Agents**); **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 17 OF 19 MEDLINE
AN 81136278 MEDLINE
DN 81136278 PubMed ID: 7471384
TI Improved method for determination of high-density-lipoprotein cholesterol II. Enzymic determination of cholesterol in high-density lipoprotein fractions with a sensitive reagent.
AU Grillo F; Izzo C; Mazzotti G; Murador E
SO CLINICAL CHEMISTRY, (1981 Mar) 27 (3) 375-9.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

EM 198105
ED Entered STN: 19900316
Last Updated on STN: 19900316
Entered Medline: 19810513
AB A reagent is described for the colorimetric enzymic determination of high-density-lipoprotein (HDL) cholesterol. The reagent can be used with HDL fractions isolated by the various methods of precipitation of low- and very-low-density lipoproteins we investigated. The considerable sensitivity obtained by use of Barham-Trinder's reaction allows the sample/reagent volume ratio to be decreased to 1:80, and major interferences thus eliminated. The response is linear from 100 to 2000 mg of HDL cholesterol per liter. The maximum CV obtained in precision tests was approximately 1% within series and approximately 3% between series. Most of the bilirubin interference is eliminated by adopting a reaction pH of 6.1. Because of its sensitivity, the reagent is particularly suitable for use with HDL fractions isolated after precipitation with polyethylene glycol 6000, which are characterized by a marked dilution. HDL cholesterol determination with the proposed reagent is accurate and precise. Values obtained are in line with those provided for by the Abell-Kendall method. The method can easily be automated.
CT Check Tags: Human
Aminopyrine: DU, diagnostic use
Chlorophenols: DU, diagnostic use
***Cholesterol: BL, blood**
Cholesterol: ME, metabolism
Cholesterol Esterase: ME, metabolism
Cholesterol Oxidase: ME, metabolism
*Chromogenic Compounds: DU, diagnostic use
Colorimetry
Hydrogen-Ion Concentration
***Lipoproteins, HDL: AN, analysis**
Peroxidases: ME, metabolism
RN 57-88-5 (Cholesterol); 58-15-1 (Aminopyrine)
CN 0 (Chlorophenols); 0 (Chromogenic Compounds); 0 (Lipoproteins, HDL); 0 (sulfonated 2,4-dichlorophenol); **EC 1.1.3.6 (Cholesterol Oxidase)** ; EC 1.11.1. (Peroxidases); **EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 18 OF 19 MEDLINE
AN **79084550** MEDLINE
DN 79084550 PubMed ID: 215349
TI An enzymic and centrifugal method for estimating high-density lipoprotein cholesterol.
AU Allen J K; Hensley W J; Nicholls A V; Whitfield J B
SO CLINICAL CHEMISTRY, (1979 Feb) 25 (2) 325-7.
Journal code: DBZ; 9421549. ISSN: 0009-9147.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197903
ED Entered STN: 19900314
Last Updated on STN: 19900314
Entered Medline: 19790328
AB Enzymic measurement of high-density lipoprotein cholesterol with a centrifugal analyzer is described. We used polyethylene glycol (Mr 6000), final concentration 100 g/L, to precipitate low-density and very-low-density lipoproteins, thereby eliminating the difficulties of the commonly used heparin/Mn2+ precipitation method and facilitating the use of ethylenediaminetetraacetate-stabilized plasma. As measured by rocket immunoelectrophoresis, this final concentration of polyethylene glycol completely precipitates beta-lipoproteins, leaving the alpha-lipoproteins in solution. Between-run reproducibility (CV) was 3.6%, within-run reproducibility (CV) 0.8%. Reagent costs currently are $US 0.13 per test and large numbers of samples can be handled conveniently. Normal ranges were compiled for 539 men and 444 women. The high-density lipoprotein cholesterol for men was 1.20 +/- 0.31 (SD) mmol/L and for women 1.52 +/-

0.38 (SD) mmol/L.
CT Check Tags: Female; Human; Male
Adult
Aged
Centrifugation
***Cholesterol: BL, blood**
Cholesterol Esterase
Cholesterol Oxidase
Costs and Cost Analysis
***Lipoproteins, HDL: BL, blood**
Methods
Middle Age
Polyethylene Glycols
Reagent Kits, Diagnostic
Reference Values
RN 57-88-5 (Cholesterol)
CN 0 (Lipoproteins, HDL); 0 (Polyethylene Glycols); 0 (Reagent Kits, Diagnostic); **EC 1.1.3.6 (Cholesterol Oxidase); EC 3.1.1.13 (Cholesterol Esterase)**

L84 ANSWER 19 OF 19 MEDLINE
AN 76263470 MEDLINE
DN 76263470 PubMed ID: 182901
TI Enzymatic **determination** of cholesterol in serum lipoproteins.
AU Kupke I R
SO JOURNAL OF CLINICAL CHEMISTRY AND CLINICAL BIOCHEMISTRY, (1976 May) 14 (5) 217-23.
Journal code: I3U; 7701860. ISSN: 0340-076X.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197610
ED Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19761020
AB A new method for the quantitative determination of the cholesterol content of serum lipoprotein is described. Electrophoresis of the serum lipoproteins on agarose gel is followed by the enzymatic determination of the lipoprotein cholesterol. The cholesterol is released from the agarose pieces containing the lipoproteins by dissolving the agarose with HCl. No influence of the HCl on cholesterol, and no influence of the agarose degradation products on the enzyme reactions was observed. The analytical procedure is simple and only 20 mul serum are required. The average coefficient of variation for the determination of the beta-lipoprotein cholesterol less than 4%, and it is less than 8% in the pre-beta-lipoproteins of Type IV hyperlipidemic patients. The cholesterol contents found in the other lipoprotein fractions have to be interpreted as an approximation. Semiautomation seems to be possible. In preliminary studies, the cholesterol concentrations of the serum lipoproteins were determined in some control subjects and some hyperlipidemic patients. The results are in good agreement with data obtained by ultracentrifuge studies performed by other investigators. The advangates of this new procedure and aspects of application are discussed.
CT Check Tags: Comparative Study; Human
Blood Protein Electrophoresis
***Cholesterol: BL, blood**
Electrophoresis, Agar Gel
Hydroxysteroid Dehydrogenases: DU, diagnostic use
Hyperlipidemia: BL, blood
***Lipoproteins: BL, blood**
Lipoproteins, HDL: BL, blood
Lipoproteins, LDL: BL, blood
Lipoproteins, VLDL: BL, blood
Methods
RN 57-88-5 (Cholesterol)

CN 0 (Lipoproteins); 0 (Lipoproteins, HDL); 0 (Lipoproteins, LDL); 0 (Lipoproteins, VLDL); **EC 1.1.- (Hydroxysteroid Dehydrogenases)**

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MOST RECENT DERWENT UPDATE 200174 <200174/DW>
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=> d all abeq tech tot

L112 ANSWER 1 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-609973 [70] WPIX
DNN N2001-455349 DNC C2001-182015
TI Measuring **cholesterol** in remnant like **lipoprotein**, involves acting **cholesterol esterase** and **cholesterol oxidase** on a living sample.
DC B04 D16 S03
IN MIYAUCHI, K
PA (KYOW) KYOWA MEDEX CO LTD; (KYOW) KYOWA MEDEX KK; (MIYA-I) MIYAUCHI K
CYC 30
PI JP 2001231597 A 20010828 (200170)* 9p C12Q001-60 <--
AU 2001023243 A 20010830 (200170) C12Q001-60 <--
CA 2337559 A1 20010828 (200170) EN G01N033-92 <--
EP 1132482 A2 20010912 (200170) EN C12Q001-60 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2001031479 A1 20011018 (200170) C12Q001-60 <--
ADT JP 2001231597 A JP 2000-50902 20000228; AU 2001023243 A AU 2001-23243 20010226; CA 2337559 A1 CA 2001-2337559 20010222; EP 1132482 A2 EP 2001-104481 20010228; US 2001031479 A1 US 2001-788393 20010221
PRAI JP 2000-50902 20000228
IC ICM **C12Q001-60; G01N033-92**
ICS **C12Q001-26; C12Q001-28; C12Q001-32; C12Q001-44**
AB JP2001231597 A UPAB: 20011129
NOVELTY - Measuring **cholesterol** in remnant like **lipoprotein**, comprising acting **cholesterol esterase** and **cholesterol oxidase** or **cholesterol dehydrogenase** and enzyme hydrolyzing **lipoprotein** upon living sample and measuring the produced hydrogen peroxide or reducing type co-enzyme, is new.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a reagent for measuring **cholesterol** in remnant like **lipoprotein** comprising **cholesterol esterase** and **cholesterol oxidase** or **cholesterol dehydrogenase** and enzyme hydrolyzing **lipoprotein**.
USE - For measuring **cholesterol** in remnant like **lipoprotein**.
ADVANTAGE - High sensitivity can be attained.
Dwg.0/1

FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-L03A; B04-L03D; B04-L05A; B04-N05; B11-C08E3; B12-K04A; D05-A02A; D05-A02C; D05-H09
EPI: S03-E14H

L112 ANSWER 2 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-426130 [46] WPIX
DNN N2001-316144 DNC C2001-129024
TI Serum low-density LP determination reagent.
DC A96 B04 D16 S03
IN AI, X; ZOU, G
PA (WUHA-N) WUHAN AIKEMA BIOLOGICAL TECHNOLOGY CO LT
CYC 1
PI CN 1281981 A 20010131 (200146)* G01N033-52 <--
ADT CN 1281981 A CN 1999-116564 19990726
PRAI CN 1999-116564 19990726
IC ICM **G01N033-52**
AB CN 1281981 A UPAB: 20010815
NOVELTY - The serum low-density **lipoprotein** assay reagent includes reagent A formed from alpha-sulfonated cyclodextrin, dextran sulfate, MgCl2, dichlorophenol, N-ethyl-N(3-tolyl)-N'-succinylvinyldiamine and 3-(N-morpholine)-2-hydroxypropyl sulfoacid buffer solution and reagent B formed from **cholesterol esterase**, **cholesterol oxidase**, peroxidase, 4-ampyrone, polyoxyethylene-polyoxypropylene polyether and 3-(N-morpholine)-2-hydroxypropyl sulfoacid buffer solution. It prossesses the advantages of that it has no need of precipitation of sample, separating operation is simple, convenient and quick, cost is low and accuracy is high and good, etc..
Dwg.0/0
FS CPI EPI
FA AB
MC CPI: A05-H03; A05-H04; A12-V03C2; B04-B04D4; B04-C02B1; B04-C02C; B04-C03C; B04-L03A; B04-L03B; B04-L05A; B04-N05; B12-K04A2; D05-H09
EPI: S03-E14H

L112 ANSWER 3 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-384335 [41] WPIX
DNN N2001-282086 DNC C2001-117604
TI Determination of **lipoprotein cholesterol** by reacting **lipoprotein** in sample and enzyme in presence of polymer compounds.
DC A96 B04 D16 S03
PA (SHOW) SHOWA DENKO KK
CYC 1
PI JP 2001017197 A 20010123 (200141)* 10p C12Q001-46 <--
ADT JP 2001017197 A JP 1999-188213 19990701
PRAI JP 1999-188213 19990701
IC ICM **C12Q001-46**
ICS **G01N033-92**
AB JP2001017197 A UPAB: 20010724
NOVELTY - Determination of **lipoprotein cholesterol**, particularly **cholesterol esterase**, **cholesterol oxidase** or **cholesterol** hydrogenase, or high density **lipoprotein** (HDL) and/or low density **lipoprotein** (LDL), comprises reacting **lipoprotein** in a sample and an enzyme in the presence of polymer compounds (I).
DETAILED DESCRIPTION - Determination of **lipoprotein cholesterol**, particularly **cholesterol esterase** , **cholesterol oxidase** or **cholesterol** hydrogenase, or high density **lipoprotein** (HDL) and/or low density **lipoprotein** (LDL), by a reaction of **lipoprotein** in a sample and an enzyme in the presence of polymer compounds (I) comprising -CH2-C(R1)(R2)- (a) and -CH(X)-C(R3)(Y)- (b) in a weight ratio of (a):(b) = 1-99:99-1, and particularly having a molecular weight of 5000-500000 dalton, at a concentration of 0.001-1 w/v%, under pH 5-9, and

copolymer of at least one of 6-32C 1-olefin and maleic, acrylic or methacrylic acid or their amides.
R1 = 4-30C alkyl;
R2, R3 = H or methyl;
X = H or COOH;
Y = COOH, SO3H or PO(OH)2, or their derivatives.
USE - Used for determination of **lipoprotein cholesterol** in serum and plasma.
ADVANTAGE - Correct determination of **lipoprotein cholesterol** is effected.
Dwg.0/1
FS CPI EPI
FA AB; DCN
MC CPI: A04-D04A; A04-F01A; A04-G01E; A12-V03C2; B04-C01; B04-C03; B04-L01; B04-N05; B11-C08E3; B12-K04; D05-A01A2; D05-A01B; D05-H09
EPI: S03-E14H5

L112 ANSWER 4 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-362647 [38] WPIX
DNN N2001-264329 DNC C2001-111770
TI Low density **lipoprotein cholesterol** assay method, involves adding **cholesterol oxidase** which selectively acts on free **cholesterol** in sample and measuring hydrogen peroxide formed from free **cholesterol**.
DC B04 D16 S03
PA (KIKK) KIKKOMAN CORP
CYC 1
PI JP 2001103997 A 20010417 (200138)* 8p C12Q001-60 <--
ADT JP 2001103997 A JP 1999-287993 19991008
PRAI JP 1999-287993 19991008
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-28**
ICA G01N033-92
AB JP2001103997 A UPAB: 20010711
NOVELTY - A **cholesterol oxidase** which selectively acts on free **cholesterol** in low density **lipoprotein** (LDL) sample and hydrogen peroxide formed from the free **cholesterol** is measured.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for reagent for LDL **cholesterol** assay.
USE - For laboratory tests.
ADVANTAGE - Use of additives such as surfactant, sugar compound and **cholesterol esterase** is eliminated or reduced. LDL **cholesterol** assay is precisely performed by simple method.
Dwg.0/2
FS CPI EPI
FA AB; DCN
MC CPI: B04-L03A; B04-N05; B11-C08E3; B12-K04E; D05-A02A; D05-H09
EPI: S03-E14H

L112 ANSWER 5 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-282797 [30] WPIX
DNN N2001-201492 DNC C2001-086394
TI Serum high-density **lipoprotein** determination reagent.
DC B04 D16 S03
IN AI, X; ZOU, G
PA (WUHA-N) WUHAN AIKEMA BIOLOGICAL TECHNOLOGY CO LT
CYC 1
PI CN 1281982 A 20010131 (200130)* G01N033-52 <--
ADT CN 1281982 A CN 1999-116565 19990726
PRAI CN 1999-116565 19990726
IC ICM **G01N033-52**
AB CN 1281982 A UPAB: 20010603
NOVELTY - The serum high-density **lipoprotein** assay reagent includes reagent A, and reagent B containing polyanion, it can be used for automatic biochemical analyzer, its stability and anti-pollution power

are strong, it can be made into freeze-dried product favorable for transportation and storage.

DETAILED DESCRIPTION - The serum high-density **lipoprotein** assay reagent includes reagent A containing polyanion, sodium cholate, 4-ampyrone (4-AAP) and phosphoric acid buffer solution and reagent B containing **cholesterol oxidase** (COD), **cholesterol esterase** (CEH), peroxidase (POD) and dichlorophenol (DCP), and its percent recovery is up to 97-102%, its accuracy, in a day CV, is 0.8-1.2%, and day CV is 1.2-1.8%.

Dwg.0/0

FS CPI EPI
FA AB
MC CPI: B04-N05; B11-C08; B12-K04; B12-M05; D05-H09; D05-H13
EPI: S03-E14H

L112 ANSWER 6 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-159081 [16] WPIX
DNC C2001-047161
TI Measuring **cholesterol** in low density **lipoproteins**, and an apparatus for analysis of analytes in blood which reduces interference from materials such as red blood cells.
DC B04 D16
IN ANAOKAR, S G; CONNOLLY, J; CRISPINO, M J; MCCAFFERY, T M; MITCHEN, J R; PASQUA, J J; ZENG, H L
PA (POLY-N) POLYMER TECHNOLOGY SYSTEMS INC
CYC 19
PI WO 2000078998 A1 20001228 (200116)* EN 39p C12Q001-44 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: US
ADT WO 2000078998 A1 WO 2000-US16816 20000616
PRAI US 1999-139983P 19990618
IC ICM **C12Q001-44**
ICS C08B037-16; **C12Q001-00**; **C12Q001-26**; **C12Q001-28**; **C12Q001-60**
AB WO 200078998 A UPAB: 20010323
NOVELTY - Measuring **cholesterol** in low density **lipoproteins** (LDLs) in a living sample by optical measurement of a reaction product of living sample with a reagent, comprising conducting the reaction in the presence of a non-ionic surfactant and cyclodextrin or a cyclodextrin derivative.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a process for measuring **cholesterol** in LDLs in a living sample, comprising:

(1) treating the living sample with a reagent comprising cyclodextrin or a derivative of cyclodextrin, and a surfactant;

(2) measuring reflectance resulting in color on a membrane which is reactive to **cholesterol**, where the membrane contains **cholesterol oxidase**, **cholesterol esterase** and peroxidase with electron acceptors which change color; and

(3) providing the amount of **cholesterol** in the living sample on the basis of the reflectance data measured in step (b).

A coupler, a developer, peroxidase, a surfactant and **cholesterol oxidase** are contained in at least one or two layers.

USE - For assaying whole blood components, especially **cholesterol** in blood (claimed).

ADVANTAGE - The system allows analytes in whole blood to be assayed, in one step, without physical or chemical interference caused by red blood cells or other portions of whole blood.

Dwg.0/6

FS CPI
FA AB; DCN
MC CPI: B01-D02; B04-B04D5; B04-C02B1; B10-A09B; B10-B02; B11-C07B2; B12-K04A; B12-M09; D05-H09
TECH UPTX: 20010323

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Materials: The cyclodextrin derivative is dimethyl-alpha-cyclodextrin or poly-beta-cyclodextrin. The amphoteric surfactant is an alkyl betaine derivative, an imidazolinium betaine derivative, a sulfobetaine derivative, an aminocarboxylic acid derivative, an imidazoline derivative, an amine oxide or an ethoxylated acetylene derivative.

L112 ANSWER 7 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-091579 [10] WPIX
DNC C2001-027035
TI Pretreatment of sample containing **lipoproteins** for quantifying **cholesterol** e.g. when diagnosing and preventing arteriosclerosis and ischemic diseases, comprises treating the sample with an enzyme and optionally, a reaction accelerator.
DC B04 D16
IN MANABE, M; NAKAMURA, M; TANIGUCHI, Y; YAMAMOTO, M
PA (DAUC) DAIICHI PURE CHEM CO LTD
CYC 92
PI WO 2000078999 A1 20001228 (200110)* JA 38p C12Q001-60 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000054263 A 20010109 (200122) C12Q001-60 <--
ADT WO 2000078999 A1 WO 2000-JP3860 20000614; AU 2000054263 A AU 2000-54263 20000614
FDT AU 2000054263 A Based on WO 200078999
PRAI JP 2000-26737 20000203; JP 1999-174624 19990621
IC ICM **C12Q001-60**
ICS C12N009-04; **C12Q001-26**
AB WO 200078999 A UPAB: 20010220
NOVELTY - A new pretreatment method for a sample containing **lipoproteins**, before measuring **cholesterol** contained in specific **lipoproteins**, comprises treating the sample with an enzyme and optionally, a reaction accelerator. The substrate for the enzyme is free **cholesterol**.

DETAILED DESCRIPTION - A new pretreatment method for quantifying **cholesterol** in a sample containing **lipoproteins**, before measuring **cholesterol** contained in specific **lipoproteins**, comprises treating the sample with an enzyme and optionally, a reaction accelerator. The substrate for the enzyme is free **cholesterol**.

The reaction accelerator is flufenamic acid, mefenamic acid, 2,2',6',2-terpyridine, tiglic acid, fusidic acid, betamethasone acetate, monensin or mevinolin.

INDEPENDENT CLAIMS are also included for the following:

(1) a method for quantifying **cholesterol** by measuring **cholesterol** in the specific **lipoprotein** after pretreatment with free **cholesterol** as substrate for the enzyme reaction, and optionally with a reaction accelerator added;

(2) a reagent for pretreating a sample for **cholesterol** quantitation comprising an enzyme with free **cholesterol** as substrate but without a substrate that can act on **lipoproteins**, or without **cholesterol esterase**, and optionally with the reaction accelerator;

(3) a kit for quantifying **cholesterol** comprising reagents including a first reagent of **cholesterol oxidase** and hydrogen peroxide-consuming material, and a second reagent of a substance for acting on the specific **lipoproteins**, **cholesterol esterase** and chromogenic reagent, or these ingredients together with **cholesterol dehydrogenase**, coenzyme and reaction accelerator in various combinations and orders of addition to effect reaction; and

(4) a reaction accelerator as defined above for enzymes like **cholesterol oxidase** or **cholesterol**

dehydrogenase with free **cholesterol** as substrate.
USE - The method is useful for quantifying **cholesterol** e.g. with automatic analyzer for diagnosis and prevention of arteriosclerosis and ischemic diseases.
ADVANTAGE - The method is convenient and can provide results with accuracy, efficiency and without resorting to polyanionic and precipitation techniques.
Dwg.0/3
FS CPI
FA AB; DCN
MC CPI: B01-C01; B01-D02; B02-F; B04-L03A; B04-L03D; B04-L05A; B07-A02; B07-D04C; B10-B01A; B10-C04E; B11-C08E3; B12-K04A2; D05-A02A; D05-A02C; D05-H09
TECH UPTX: 20010220
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: The enzyme with free **cholesterol** as substrate can be **cholesterol oxidase** or **cholesterol dehydrogenase**.
In the method of (1), the enzyme with free **cholesterol** as substrate can be **cholesterol oxidase** or **cholesterol dehydrogenase**. The specific **lipoprotein** is particularly high-density **lipoprotein**.

L112 ANSWER 8 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-065579 [08] WPIX
DNN N2001-049562 DNC C2001-018645
TI Measuring method of **lipase** activity value, **cholesterol** level in sample, involves using reagent having preset compounds for measuring **lipase** activity value, **cholesterol** level and neutral fat concentration.
DC B04 D16 S03
PA (SHIN-N) SHINOTEST KK
CYC 1
PI JP 2000287700 A 20001017 (200108)* 13p C12Q001-34 <--
ADT JP 2000287700 A JP 2000-27050 20000204
PRAI JP 1999-67271 19990205
IC ICM **C12Q001-34**
ICS **C12Q001-60; C12Q001-61; G01N033-92**
AB JP2000287700 A UPAB: 20010207
NOVELTY - A **lipase** activity measuring reagent containing 1,2-o-dilauryl-rac-glycero-3-glutaric acid ester, is new. The **cholesterol** measuring reagent contains the **cholesterol esterase** derived from cow pancreas. The neutral fat measuring reagent contains **lipoprotein lipase** and/or Candida.
USE - For measuring **lipase** activity value, **cholesterol** level, neutral fat concentration in sample in field such as analytical chemistry, bioscience, biochemistry, clinical laboratory test.
ADVANTAGE - Enables the measurement of **lipase** activity value, **cholesterol** level, and neutral fat concentration using identical measuring apparatus accurately.
Dwg.0/0
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-B01B; B04-F09; B04-L05A; B11-C08; B12-K04; D05-H09
EPI: S03-E14H

L112 ANSWER 9 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-049963 [06] WPIX
DNN N2001-038284 DNC C2001-013771
TI Determining **cholesterol** contents of different **lipoprotein** fractions, useful e.g. for assessing risk of coronary arterial disease, with temporary conversion of one fraction to unreactive complex.
DC B04 D16 S03
IN CSAKO, G; REMALEY, A T; SAMPSON, M L

PA (USSH) US DEPT HEALTH & HUMAN SERVICES
CYC 93
PI WO 2000073797 A2 20001207 (200106)* EN 40p G01N033-53 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000054493 A 20001218 (200118) G01N033-53 <--
ADT WO 2000073797 A2 WO 2000-US14827 20000526; AU 2000054493 A AU 2000-54493 20000526
FDT AU 2000054493 A Based on WO 200073797
PRAI US 1999-136709P 19990528
IC ICM **G01N033-53**
AB WO 200073797 A UPAB: 20010126
NOVELTY - Determining amounts of **cholesterol** (I) in **lipoprotein** fractions (A) comprising forming a complex, which is not a substrate for **cholesterol esterase** (CE), between a first fraction (A1) and a complex-forming agent (II), measuring (I) in a second fraction (A2), dissociating the complex and measuring the total amount of (I), to determine (I) contents of both fractions, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a kit for determining (I), comprising (II) and a non-denaturing detergent (III).

USE - The method is used to determine low- and high-density **lipoprotein cholesterol**, and total **cholesterol**, in the serum, particularly for assessing the risk of coronary arterial disease and for monitoring therapy.

ADVANTAGE - The process requires only simple steps, performed on a single liquid phase and in a single tube. Pre-processing by precipitation or centrifuging are not required, nor are additional reporter enzymes for measurement of total (I), so the method is less complex and less expensive. All commonly determined **lipoproteins** fractions can be determined, optionally also triglycerides (in a separate assay but in the same tube).

Dwg.0/6
FS CPI EPI
FA AB; DCN
MC CPI: B04-B04D4; B04-N05; B11-C07A; B11-C07B1; B11-C08; B12-K04A; D05-H09
EPI: S03-E14H4
TECH UPTX: 20010126
TECHNOLOGY FOCUS - BIOLOGY - Preferred Materials: The complex is not a substrate for **cholesterol oxidase** (CO) or **cholesterol dehydrogenase** (CDH). (A1) is either high-density **lipoprotein-cholesterol** (HDL-C) or low-density **lipoprotein-cholesterol** (HDL-C) and (A2), correspondingly, non-HDL-C or non-LDL-C, or (A1) contains any apoB-containing **lipoproteins** in the sample. (II) is an antibody specific for **lipoproteins** of (A1), particularly for apoB or for apoAI and AII. Alternatively (A1) is a polyanion or a sulfated cyclodextrin. Particularly the polyanions are dextran, heparin, chondroitin or polyvinyl sulfates, heparin, phosphotungstic acid, hyaluronic acid or a sulfated oligosaccharide.
Preferred Process: The complex is dissociated by treatment with (III), specifically deoxycholate. The (I) content is measured by reacting (I) esters with CE, then the free (I) produced measured by:
(a) reaction with CO in presence of a reporter enzyme (typically peroxidase) that can cause a color change in an indicator; or
(b) by reaction with CDH in presence of NAD (nicotinamide-adenine dinucleotide) and determining formation of reduced NAD by optical absorption measurements.
The enzymes used in this step are not denatured during dissociation of the complex, and can also be used to measure (I) released from the complex. Optionally, the triglyceride content of the sample is also measured, in the same reaction tube, either by using **lipase**, glycerol

phosphate dehydrogenase or **oxidase**, and peroxidase to produce a color change, or using a **lipase**, glycerol kinase, pyruvate kinase and lactate dehydrogenase, with measurement of reduced NAD.
Preferred Kits: The kits may also include:
(a) at least one of CE, CO and CDH;
(b) at least one of **lipase**, glycerol kinase, glycerol phosphate dehydrogenase or **oxidase**, and peroxidase; or
(c) pyruvate kinase and/or lactate dehydrogenase.

L112 ANSWER 10 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2000-594205 [56] WPIX
DNN N2000-440088 DNC C2000-177432
TI Enzymatic assay of biological sample components such as specific components in **lipoproteins** contained in serum e.g. for the easy, simple and quick determination of **cholesterol** in **lipoproteins** through single or multiple sample treatment.
DC B04 D16 J04 S03
IN **HASEGAWA, Y; KAKUYAMA, T; KISHI, K; OCHIAI, K**
PA **(ITRE-N) INT REAGENTS CORP**
CYC 22
PI WO 2000052480 A1 20000908 (200056)* JA 32p G01N033-92 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: CA JP KR US
ADT WO 2000052480 A1 **WO 2000-JP1172 20000229**
PRAI JP 1999-53330 19990301
IC ICM **G01N033-92**
ICS **C12Q001-44**
AB WO 200052480 A UPAB: 20001106
NOVELTY - A method for quantitating a specific components in **lipoprotein** samples, comprises enzymatic reaction of the component in a **lipoprotein** fraction derived from serum (during which a regulatory system is introduced to enable the determination of only the target component preferentially, without forming complexes and/or aggregates), is new.
USE - The method is for the determination of **cholesterol** content in **lipoproteins** (including high-density **lipoprotein**, low-density **lipoprotein** or very low-density **lipoprotein**) and other lipid components like neutral lipids and phospholipids.
ADVANTAGE - The method is easy, simple, quick and uses an ordinary automatic analyzer without the need for centrifugation by a trained operator and does not produce cloudiness due to complexes or aggregates.
Dwg.0/4
FS CPI EPI
FA AB; DCN
MC CPI: B04-B04D; B04-B04L; B04-L01; B04-N02; B04-N05; B11-A02; B11-C08E3; B11-C09; B12-K04A; B12-K04E; D05-A02; D05-H09; J04-B01
EPI: S03-E14H
TECH UPTX: 20001106
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: The regulatory system comprises adjusting the ionic strength of the reaction solution (which can be adjusted to a very high value) for the reaction of the enzyme and the component in the high-density **lipoprotein** (HDL) fraction (e.g. to enable the preferential action of **lipoprotein lipase** and/or **cholesterol esterase** in reaction with the HPL fraction). The regulatory system may also comprise applying the reaction selectivity of a selective non-ionic surfactant towards specific **lipoproteins**, particularly by using non-ionic surfactant with a HLB (hydrophile-lyophile balance) value of not less than 16. The assay may involve a combination of altering the ionic strength and using the non-ionic surfactant. During the assay, a first enzyme reaction system is preferably used for selective determination or digestion of **cholesterol** component in the HDL fraction, followed by a second enzyme reaction system with addition of a non-ionic surfactant with a HLB value of 11-13 for measuring the

cholesterol component in the low-density **lipoprotein** (LDL) fraction. **Cholesterol** in the very low-density **lipoprotein** (VLDL) fraction can also be determined simultaneously or separately in the first and second enzyme reaction systems after decomposing the VLDL fraction through an enzyme reaction. **Cholesterol oxidase** or **cholesterol** dehydrase is added for digestion to give free **cholesterol** for determination. pH Of the reaction solution is selectively adjusted to a suitable value so that there is no **lipoprotein** aggregation or turbidity.

L112 ANSWER 11 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2000-283609 [24] WPIX
DNC C2000-085721
TI Methods for fractional quantification of **cholesterol** in **lipoproteins** in biological samples such as serum which is applicable by simple automatic procedure, useful for clinical diagnosis of e.g. arteriosclerosis.
DC B04 D16
IN SUGIUCHI, H
PA (KYOW) KYOWA MEDEX CO LTD
CYC 44
PI WO 2000017388 A1 20000330 (200024)* JA 46p C12Q001-60 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AU BG BR CA CN CZ HU ID IL IN JP KR MX NO NZ PL RO SG SI SK UA US VN ZA
AU 9949320 A 20000410 (200035) C12Q001-60 <--
EP 1114870 A1 20010711 (200140) EN C12Q001-60 <--
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 2000017388 A1 WO 1999-JP4128 19990730; AU 9949320 A AU 1999-49320 19990730; EP 1114870 A1 EP 1999-933203 19990730, WO 1999-JP4128 19990730
FDT AU 9949320 A Based on WO 200017388; EP 1114870 A1 Based on WO 200017388
PRAI JP 1998-264367 19980918
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-44**
AB WO 200017388 A UPAB: 20000522
NOVELTY - A novel method for quantifying low density and/or high-density **lipoprotein** ((LDL) and (HDL) respectively) **cholesterol** in a biological sample comprises:
(1) obtaining a biological sample;
(2) mixing with **cholesterol esterase**, **oxidase** or dehydrogenase; and
(3) reacting **cholesterol** with its specific **cholesterol** (CH) enzyme in the presence of a reagent to generate hydrogen peroxide or reduced co-enzyme.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(A) a method for fractional quantification of HDL **cholesterol** and total **cholesterol** in a biological sample comprising steps (1) and (2) as above followed by:
(1) reacting HDL **cholesterol** with its specific CH enzyme in the presence of a reagent to perform a first **cholesterol** reaction to generate hydrogen peroxide or reduced co-enzyme for determination of HDL **cholesterol** concentration, and
(2) reacting **cholesterol** in all **lipoproteins** with a CH enzyme in the presence of an added reagent to give a second **cholesterol** reaction to generate hydrogen peroxide or reduced co-enzyme for determination of total **cholesterol** in HDL, LDL, very-low-density **lipoprotein** (VLDL) and chylomicron (CM);
(B) a reagent for the reaction of **cholesterol** in all **lipoproteins** containing a surfactant that can dissolve the **lipoprotein**;
(C) a quantification reagent for LDL **cholesterol** comprising a CH enzyme and a reagent to act on the LDL **cholesterol**-specific CH enzyme;
(D) a reagent kit for fractional quantification of HDL **cholesterol** and LDL comprising a first reagent of aggregating

reagent for **lipoprotein** other than LDL and a CH enzyme, and a second reagent containing a reagent that can act on the LDL **cholesterol**-specific CH enzyme; and

(E) a reagent kit for fractional quantification of HDL **cholesterol** and total **cholesterol** comprising the first reagent of specific **lipoprotein**-aggregating reagent and CH enzyme, and a second reagent for CH enzyme to act on **cholesterol** in all **lipoproteins**. The second reagent particularly contains a **lipoprotein**-dissolving surfactant, while the first reagent is one as defined above.

USE - The new methods are useful for clinical diagnosis of diseases related to high **cholesterol** levels in **lipoproteins** e.g. arteriosclerosis.

ADVANTAGE - Such methods are applicable by using a simple automatic procedure.

Dwg.1/5

FS CPI
FA AB; GI; DCN
MC CPI: B04-B04L; B04-L03; B04-L05; B04-N05; B11-C08; B12-K04A; B12-K04E; D05-A02A; D05-A03B; D05-H09
TECH UPTX: 20000522

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Method: The reagent for use in the reaction is one contains at least polyoxyethylene derivative and polyoxyethylene copolymer. Such polyoxyethylene derivative can be polyoxyethylene alkyl ether or polyoxyethylene alkyl aryl ether. The polyoxyethylene-polyoxypropylene copolymer is particularly a surfactant of formula (I). HO-(C2H2O)a-(C3H6O)b-(C2H4O)-H (I)

Preferred Method: Particularly, the reagent for the reaction of HDL **cholesterol** and its specific enzyme is one that can aggregate with **lipoprotein** other than HDL, especially a reagent containing a non-ionic surfactant to make the aggregated **lipoprotein** insoluble, e.g. heparin or its salt, phophowolframic acid (sic) or its salt, dextran sulfate or its salt, polyethylene glycol, sulfated cyclodextrin or its salt, sulfate oligosaccharide or its salt, or their mixture, and divalent metal salt. The CH enzyme used in the first **cholesterol** reaction is preferably a chemically-modified enzyme, while that of the second reaction is a non-chemically-modified enzyme.

Preferred Reagents: The second reagent particularly contains a surfactant of polyoxyethylene derivative and polyoxyethylene-polyoxypropylene copolymer as already defined.

L112 ANSWER 12 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2000-090533 [08] WPIX
CR 1998-183360 [17]
DNN N2000-071101 DNC C2000-025730
TI Assay of **cholesterol** in low density **lipoprotein** for clinical diagnosis - involves eliminating **cholesterol** in high density **lipoprotein**, very low density **lipoprotein** and chylomicron and assaying residual **cholesterol**.
DC B04 D16 S03
PA (DENK-N) DENKA SEIKEN KK
CYC 1
PI JP 11318496 A 19991124 (200008)* 10p C12Q001-60 <--
ADT JP 11318496 A Div ex JP 1997-111944 19970414, JP 1999-86072 19970414
PRAI JP 1996-116944 19960415
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-44; G01N033-92**
AB JP 11318496 A UPAB: 20000215

NOVELTY - Assay of **cholesterol** involving eliminating **cholesterol** in high density **lipoprotein**, very low density **lipoprotein** and chylomicron and assaying residual **cholesterol**, is new. The method also eliminates the hydrogen peroxide using **Cholesterol oxidase**.

USE - The assay of low density **lipoprotein** **cholesterol** is used for the clinical diagnosis of arteriosclerosis.

ADVANTAGE - The low density **lipoprotein** **cholesterol** assay is very easy and does not require complicated centrifugation operation due to the elimination of hydrogen peroxide and **cholesterol** in high density **lipoprotein**, very low density **lipoprotein** and chylomicron.
Dwg.0/3
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-L03A; B11-C08; B12-K04A; D05-H09
EPI: S03-E14H

L112 ANSWER 13 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1999-443009 [37] WPIX
CR 1996-497796 [49]; 1999-069709 [06]; 1999-383976 [32]
DNC C1999-130466
TI Measuring the amount of **cholesterol** in low density **lipoproteins** to identify individuals at risk of arteriosclerosis and ischemic heart disease.
DC A96 B01 B04 D16
IN FUTATSUGI, M; HANADA, T; IMAJO, N; KOYAMA, I; MIKI, Y
PA (WAKP) WAKO PURE CHEM IND LTD; (WAKP) WAKO JUNYAKU KOGYO KK
CYC 29
PI US 5925534 A 19990720 (199937)* 28p C12Q001-60 <--
EP 964249 A2 19991215 (200003) EN G01N033-48 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
CA 2245261 A1 19991208 (200021) EN C12Q001-60 <--
JP 2000060600 A 20000229 (200022) 18p C12Q001-60 <--
KR 2000004844 A 20000125 (200061) G01N033-48 <--
ADT US 5925534 A US 1998-128930 19980805; EP 964249 A2 EP 1998-306312 19980806; CA 2245261 A1 CA 1998-2245261 19980807; JP 2000060600 A JP 1999-67854 19990315; KR 2000004844 A KR 1998-32739 19980812
PRAI JP 1998-175396 19980608
IC ICM **C12Q001-60**; **G01N033-48**
ICS **C12Q001-00**; **C12Q001-26**; **C12Q001-30**; **C12Q001-32**; **C12Q001-44**; **G01N033-53**; **G01N033-92**
AB US 5925534 A UPAB: 19990914
NOVELTY - A method (X) for measuring the amount of **cholesterol** in low density **lipoproteins** (LDLs) in a sample, is new. (X) comprises:
(i) contacting the sample with at least 1 solution to carry out the reaction in the presence of a polyanion and an amphoteric surfactant; and
(ii) subjecting the reaction product obtained to an optical measurement to determine the amount of **cholesterol**.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(i) a reagent (A) for measuring the amount of **cholesterol** in LDLs, which comprises:
(1) **cholesterol esterase** (1) and **cholesterol oxidase** (2) or **cholesterol dehydrogenase** (3);
(2) a polyanion; and
(3) an amphoteric surfactant;
(ii) a reagent (B) for measuring the amount of **cholesterol** in LDLs, which comprises:
(1) a polyanion;
(2) an amphoteric surfactant;
(3) (1);
(4) (2), peroxidase (4) and an oxidisable color producing reagent or (3) and (5); and
(5) an aqueous medium;
(iii) a kit (I) for measuring the amount of **cholesterol** in LDLs, which comprises:
(1) a reagent container (Ia) containing:
(a) a polyanion;

(b) an amphoteric surfactant;
(c) (1);
(d) (2), (4) and an oxidisable color producing reagent or (3) and nicotinamide adenine dinucleotide (phosphate) (5); and
(e) an aqueous medium; and
(2) a reagent container (Ib) containing an aqueous medium;
(iv) a kit (II) for measuring the amount of **cholesterol** in LDLs, which comprises:
(1) a reagent container (IIa) containing:
(a) a polyanion;
(b) an amphoteric surfactant;
(c) (1);
(d) (2);
(e) (4);
(f) an aqueous medium; and
(g) either a coupler or developer agent; and
(2) a reagent container (IIb) containing:
(a) an aqueous medium; and
(b) either a coupler or developer agent (depending on which chemical is absent from (IIa);
(v) a kit (III) for measuring the amount of cholesterol in LDLs, which comprises:
(1) a reagent container (IIIa) containing:
(a) a polyanion;
(b) an amphoteric surfactant;
(c) (1);
(d) (2);
(e) catalase (6);
(f) an aqueous medium; and
(g) either a coupler, developer agent and/or peroxidase; and
(2) a reagent container (IIIb) containing:
(a) a catalase inhibitor (7);
(b) an aqueous medium; and
(c) either a coupler, developer agent and/or peroxidase (depending on which chemical is absent from (IIIa);
(vi) a kit (IV) for measuring the amount of cholesterol in LDLs, which comprises:
(1) a reagent container (IVa) containing:
(a) a polyanion;
(b) an amphoteric surfactant;
(c) (1);
(d) (3);
(e) (5); and
(f) an aqueous medium; and
(2) a reagent container (IVb) containing:
(a) an aqueous medium;
(b) (2);
(c) (4);
(d) an oxidizable color producing reagent; and
(e) a cholesterol dehydrogenase inhibitor (8); and
(vii) a kit (V) for measuring the amount of cholesterol in LDLs, which comprises:
(1) a reagent container (Va) containing:
(a) a polyanion;
(b) an amphoteric surfactant;
(c) (1);
(d) (2);
(e) (4);
(f) either a coupler and/or a developer; and
(g) an aqueous medium; and
(2) a reagent container (Vb) containing:
(a) an aqueous medium;
(b) (3);
(c) (5); and
(d) a cholesterol oxidase inhibitor (9).
USE - (X) may be used for measuring the amount of cholesterol in LDLs

in samples from patients. LDL is a major carrier of cholesterol from the liver to other body tissues and increases in levels of LDLs appear to have an intimate relationship to the generation of arteriosclerosis and ischemic heart disease. Therefore, (I) may be used to measure LDL-cholesterol content, as an important indicator of diagnosis, therapy and prophylaxis of these diseases.

ADVANTAGE - (I) is a simple process with few stages and requiring few reagents (i.e. it does not require pretreatment of the sample to remove other non-LDL proteins (as compared to the ultra centrifugation and electrophoresis methods)) and may be carried out using widely available automated analyzers. (I) may be used to detect LDL-cholesterol content even if the sample contains greater than 400 mg/dl of triglycerides (compared to the Friedewald method).

Dwg.0/13

FS CPI

FA AB; DCN

MC CPI: A12-V03C2; B01-D02; B04-C02E; B10-A22; B11-C08E; B12-K04A2; B14-D05; D05-A02; D05-H09; D05-H11

TECH UPTX: 19990914

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: In (X), the optical measurement is conducted by measuring the absorbency (OD1) of the solution obtained by contacting the sample with the first reagent, and measuring the absorbency (OD2) of the solution obtained by contacting the solution for measuring OD1 after measurement of OD1 with a second solution. The OD1 measurement is conducted after the reaction of **cholesterol** in **lipoproteins** other than LDLs and before the reaction of **cholesterol** with LDLs. OD2 is measured after the **cholesterol** reacts with the LDLs. In (X), the sample is preferably contacted with at least 1 reagent in the presence of a nonionic surfactant, an anionic surfactant and/or an antibody which binds to **lipoproteins** other than LDLs.

(X) preferably comprises:

(i) contacting the sample with (in the presence of a polyanion and an amphoteric surfactant):

(1) (1), (2), (4) and an oxidisable color producing reagent; or

(2) (10), (3) and (5), to cause a reaction which produces a dye or reduced (5); and

(ii) measuring the amount of dye or reduced (5) produced, and determining the amount of **cholesterol** in LDL in the sample by measuring absorbency of the reaction solution.

Preferred Reagents: In (X), the first solution (X1) comprises either:

(i) (X1i) (preferred):

(1) a polyanion and an amphoteric surfactant;

(2) (1);

(3) (2),(4) and an oxidizable color producing reagent or (3) and (5); and

(4) an aqueous medium;

(ii) (X1ii):

(1) a polyanion and an amphoteric surfactant;

(2) (1);

(3) (2);

(4) (4); and

(5) an aqueous medium; and

(6) either a coupler or a developing agent (depending which agent is absent from the second solution);

(iii) (X1iii):

(1) a polyanion and an amphoteric surfactant;

(2) (1);

(3) (2);

(4) (6); and

(5) an aqueous medium;

(iv) (X1iv):

(1) a polyanion and an amphoteric surfactant;

(2) (1);

(3) (3);

(4) (5); and

(5) an aqueous medium; and

(v) (X1v):
(1) a polyanion and an amphoteric surfactant;
(2) (1);
(3) (2);
(4) (4);
(5) either a coupler or a developing agent (depending which agent is absent from the second solution); and
(6) an aqueous medium.
The second solution (X2) in (X) comprises either:
(i) (X2i):
(1) an aqueous medium;
(ii) (X2ii):
(1) (7);
(2) an aqueous medium;
(3) (4); and
(4) either a coupler or a developing agent (depending which agent is absent from the first solution);
(iii) (X2iii):
(1) an aqueous medium;
(2) (2);
(3) (4);
(4) (9); and
(5) an oxidizable color producing reagent; and
(iv) (X2iv):
(1) an aqueous medium;
(2) (3);
(3) (5); and
(4) (9).
The reagents are used in the following combinations:
(i) (X1i) and (X2i);
(ii) (X1iii) and (X2ii);
(iii) (X1iv) and (X2iii); and
(iv) (X1v) and (X2iv).
The amphoteric surfactant is either an alkyl betaine derivative, lauryl betaine, lauric acid amidopropyl betaine, coconut oil fatty acid amidopropyl betaine, 2-alkyl-N-carboxymethyl-N-hydroxyethyl imidazolinium betaine, 2-alkyl-N-carboxyethyl-N-hydroxyethyl imidazolinium betaine, a sulfobetaine derivative, an aminocarboxylic acid derivative, an imidazoline derivative and/or an amine oxide derivative. The polyanion is heparin, phosphotungistic acid, dextran sulfate, sulfated cyclodextrin, heparin sulfate, chondroitin sulfate, hyaluronic acid, sulfated oligosaccharide, sulfated polyactylamide and/or carboxymethylated polyactylamide (or a salt of it).

L112 ANSWER 14 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1999-145903 [13] WPIX
DNN N1999-106307 DNC C1999-042922
TI Specific determination of low- and high density **lipoprotein** **cholesterol**(s) - comprises e.g. treating biological sample with pancreatic **cholesterol esterase** and **cholesterol oxidase** in presence of albumin or bile acid.
DC B04 D16 S03
PA (IATR) IATRON LAB INC
CYC 1
PI JP 11009300 A 19990119 (199913)* 11p C12Q001-60 <--
ADT JP 11009300 A JP 1997-178914 19970619
PRAI JP 1997-178914 19970619
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-44; G01N033-92**
AB JP 11009300 A UPAB: 19990412
Specific determination of low-density **lipoprotein** **cholesterols** comprises: (i) contacting a biological sample with the pancreatic **cholesterol esterase** and a **cholesterol oxidase** in the presence of at least 0.01 wt.% of albumin or the bile ac id or a salt of the acid; (ii) contacting the treated sample with a microbial **cholesterol esterase**

; and (iii) determining the compounds consumed or produced by the enzymatic reaction caused by the low-density **cholesterol**, **esterase** and **oxidase**. Preferably the determination is carried out in the presence of one or more of auxiliary controlling agents of formula A(CH2)nCH3 (I) and BCH2CH(R1)CH2SO3- (II). A = glucoside, thioglucoside, sucroseoxycarbonyl or N-methylglucamidocarbonyl; n = 4-10; B = 3-(3-colamidopropyl)dimethylammonio; and R1 = H or hydroxyl. Also claimed is a reagent for determination of low-density **lipoprotein** **cholesterols** comprising a first reagent containing the pancreatic **cholesterol esterase**, a **cholesterol** **oxidase**, albumin and the bile acid or salt of the acid and a second reagent containing a microbial **cholesterol** **esterase**. Preferably, the reagent contains the auxiliary controlling agent in the first reagent.

ADVANTAGE - Separation and/or fractionation of biological samples (e.g. blood serum and plasma) are avoided achieving easy and high-accuracy determination of LDL and HDL **cholesterols**. (MG)

Dwg.0/5

FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-B04D4; B04-B04D5; B04-L03A; B04-L05A; B07-A02B; B11-C08E3; B12-K04A; D05-A02A; D05-A02C; D05-C12; D05-H09
EPI: S03-E14H

L112 ANSWER 15 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1999-105630 [09] WPIX
DNN N1999-076251 DNC C1999-031465
TI Assay of components such as **cholesterol** in **lipoprotein** samples - using an assay reagent containing a calixarene together with a suitable enzyme such as **cholesterol dehydrogenase**.
DC B04 D16 J04 S03
IN **KAKUYAMA, T**; **KISHI, K**; SHIRAHASE, Y; WATAZU, Y
PA (**ITRE-N**) **INT REAGENTS CORP**
CYC 20
PI WO 9859068 A1 19981230 (199909)* JA 21p C12Q001-60 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
EP 1020532 A1 20000719 (200036) EN C12Q001-60 <--
R: DE ES FR GB
US 6114134 A 20000905 (200044) C12Q001-60 <--
ADT WO 9859068 A1 WO 1998-JP2795 19980622; EP 1020532 A1 EP 1998-928635 19980622, WO 1998-JP2795 19980622; US 6114134 A Cont of WO 1998-JP2795 19980622, US 1999-453474 19991202
FDT EP 1020532 A1 Based on WO 9859068
PRAI JP 1997-169281 19970625
IC ICM **C12Q001-60**
ICS **C12Q001-00**; **G01N033-536**; **G01N033-92**
AB WO 9859068 A UPAB: 19990302
An assay reagent for components of biological specimens such as blood (e.g. high density **lipoprotein** (HDLP), low density **lipoprotein**, very low density **lipoprotein** or remnant **lipoprotein**) contains a calixarene (or more than one calixarene) which complexes with and precipitates the component in the specimen. Suitable calixarenes are calix-4-arene, calix-6-arene, calix-8-arene, or their sulphated, acetylated, carboxylated or amine derivatives. The reagent may also contain an enzyme which reacts with a substance in the specimen which it is desired to assay (e.g. **cholesterol** **esterase**, **cholesterol dehydrogenase** or **cholesterol oxidase** for **cholesterol**, or polyprotein **lipase** for phospholipid or neutral lipid). The calixarene concentration in the assay solution is preferably 0.05-20 mmol/litre.

USE - A simple, rapid assay method which has high accuracy and can be used for continuous measurement with general-purpose automatic analysis apparatus and as part of a multichannel analysis apparatus.

ADVANTAGE - The method is as accurate as existing ones (e.g.

precipitation with polyethylene glycol) but simpler to carry out, and does not require preliminary separation of the component to be assayed from the sample.
Dwg.0/0
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-L03D; B04-N05; B05-U02; B11-C07B2; B12-K04F; D05-H09; J04-B01A
EPI: S03-E14H; S03-E14H4

L112 ANSWER 16 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1998-541749 [46] WPIX
DNC C1998-162705
TI Reagent for measuring **cholesterol** in low density **lipoproteins** - comprises **cholesterol oxidase** or dehydrogenase, an amphoteric surfactant, and at least one cyclodextrin or cyclodextrin derivative.
DC B04 D16
IN HANADA, T; IMAJO, N; KOYAMA, I; MIKI, Y
PA (WAKP) WAKO PURE CHEM IND LTD; (WAKP) WAKO JUNYAKU KOGYO KK
CYC 27
PI US 5814472 A 19980929 (199846)* 13p C12Q001-60 <--
EP 878716 A1 19981118 (199850) EN G01N033-92 <--
R: AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 10311833 A 19981124 (199906) 11p G01N033-92 <--
JP 11030617 A 19990202 (199915) JA 2p G01N033-92 <--
KR 98086568 A 19981205 (200009) C12Q001-32 <--
ADT US 5814472 A US 1997-943008 19971002; EP 878716 A1 EP 1998-302436 19980330; JP 10311833 A JP 1997-137714 19970513; JP 11030617 A JP 1998-146636 19980512; KR 98086568 A KR 1998-11872 19980403
PRAI JP 1997-137714 19970513; JP 1997-137713 19970513
IC ICM **C12Q001-32**; **C12Q001-60**; **G01N033-92**
ICS **C12Q001-00**; **C12Q001-26**; **C12Q001-28**; **C12Q001-44**
AB US 5814472 A UPAB: 19981118
Reagent for measuring **cholesterol** in low density **lipoproteins**, comprising **cholesterol oxidase** or dehydrogenase, an amphoteric surfactant, and at least one cyclodextrin or cyclodextrin derivative. Also claimed are: (A) a process for measuring **cholesterol** in low density **lipoproteins** present in a living sample by optically measuring a reaction product of the living sample with (I); and (B) a kit for measuring **cholesterol** in low density **lipoproteins**, comprising: (i) a first container containing a first reagent comprising an amphoteric surfactant, **cholesterol esterase**, a coupler or a developer, and at least one cyclodextrin or cyclodextrin derivative; and (ii) a second container containing a second reagent selected from **cholesterol oxidase**, **cholesterol esterase**, peroxidase, and a developer or coupler.
USE - The reagent is used to measure levels of LDL-**cholesterol** in a living sample.
ADVANTAGE - The reagent and process are used to selectively measure LDL-**cholesterol** levels accurately, by directly using an autoanalyser, without complicated pre-treatments for separating the **cholesterol** from other, unnecessary **lipoproteins**.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B01-D02; B04-B02C2; B04-C02B1; B04-N05; B11-C08C; B11-C08E3; B12-K04E; D05-H09

L112 ANSWER 17 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1998-078841 [08] WPIX
DNN N1998-063081 DNC C1998-026383
TI Determination of low density **lipoprotein cholesterol** -

using sugar conjugates of **cholesterol esterase** and **cholesterol oxidase.**

DC B04 D16 S03
IN FUTATSUGI, M; TANAKA, I
PA (WAKP) WAKO PURE CHEM IND LTD; (WAKP) WAKO JUNYAKU KOGYO KK
CYC 27
PI EP 819765 A2 19980121 (199808)* EN 15p C12Q001-60 <--
R: AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT RO SE SI
JP 10080300 A 19980331 (199823) 12p C12Q001-60 <--
CA 2210783 A 19980118 (199827) C12Q001-60 <--
KR 98010429 A 19980430 (199915) G01N033-92 <--
US 5879901 A 19990309 (199917) C12Q001-60 <--
ADT EP 819765 A2 EP 1997-112007 19970715; JP 10080300 A JP 1997-210099 19970718; CA 2210783 A CA 1997-2210783 19970717; KR 98010429 A KR 1997-32313 19970711; US 5879901 A US 1997-895879 19970717
PRAI JP 1996-207770 19960718
IC ICM **C12Q001-60; G01N033-92**
ICS **C12Q001-26; C12Q001-28; C12Q001-44**
AB EP 819765 A UPAB: 19980223
Method for measuring the amount of low-density **lipoprotein** (LDL) **cholesterol** in a sample comprises:
(a) mixing the sample with a first reagent solution containing a buffer;
(b) measuring the optical density (OD1) of the mixture;
(c) adding a second reagent solution containing **cholesterol esterase** and **cholesterol oxidase;**
(d) measuring the optical density (OD2) of the mixture;
(e) subtracting a value obtained by multiplying OD1 with a correction factor from OD2 to obtain a value OD3, and
(f) comparing OD3 with a calibration curve.
The first and/or second reagent solutions contain a coupler, a developer and a peroxidase. The **cholesterol esterase** and/or **cholesterol oxidase** is in the form of a conjugate with a sugar compound.
Also claimed are the reagents used in the method above.
USE - The process is used for the diagnosis of atherosclerosis and disorders of lipid metabolism.
ADVANTAGE - The conjugated enzymes react specifically with LDL **cholesterol** and not with high density **lipoprotein** (HDL) **cholesterol**.
Dwg.0/4
FS CPI EPI
FA AB
MC CPI: B01-D02; B04-L03A; B04-L05A; B11-C08E3; B12-K04A; D05-A02C
EPI: S03-E14H

L112 ANSWER 18 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1998-026754 [03] WPIX
DNN N1998-021286 DNC C1998-009143
TI High density **lipoprotein cholesterol** content measurement in blood - involves using reagent comprising **cholesterol, esterase, cholesterol oxidase** of **cholesterol dehydrogenase** for performing enzyme reaction..
DC B04 D16 S03
PA (IATR) IATRON LAB INC
CYC 1
PI JP 09285298 A 19971104 (199803)* 8p C12Q001-60 <--
ADT JP 09285298 A JP 1996-122825 19960422
PRAI JP 1996-122825 19960422
IC ICM **C12Q001-60**
ICS **G01N033-92**
AB JP 09285298 A UPAB: 19980119
High density **lipoprotein cholesterol** content measurement in blood plasma or blood serum involves adding a reagent

comprising **cholesterol esterase, cholesterol oxidase** or **cholesterol dehydrogenase** and albumin to a specimen for enzyme reaction.
USE - The process is used for diagnosis of atheroma, arteriosclerosis or myocardial infarction.
ADVANTAGE - Precise measurement of high density **lipoprotein cholesterol** may be effected.
Dwg.0/0
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-B04D5; B04-L03C; B04-L03D; B04-L05A; B11-C08E3; B12-K04A2; D05-A02A; D05-A02C; D05-H09
EPI: S03-E14H1

L112 ANSWER 19 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1997-536000 [49] WPIX
DNN N1997-446159 DNC C1997-171468
TI Assaying high density **lipoprotein cholesterol** in e.g. blood serum or plasma - involves reacting **cholesterol oxidase** and **esterase** derived from pancreas, bile acid or its salt, in the presence of albumin.
DC B04 D16 S03
IN HAMA, M; KAZAHAYA, K; TANAKA, M; TSUCHIYA, H
PA (IATR) IATRON LAB INC
CYC 20
PI WO 9740376 A1 19971030 (199749)* JA 36p G01N033-48 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP KR US
JP 09537922 X 19981006 (199850) G01N033-48 <--
ADT WO 9740376 A1 WO 1997-JP1383 19970422; JP 09537922 X JP 1997-537922 19970422, WO 1997-JP1383 19970422
FDT JP 09537922 X Based on WO 9740376
PRAI JP 1996-123990 19960422
REP DE 3533288; DE 3636851; EP 218127; EP 265933; EP 415298; JP 399268; JP 6269999; JP 63126498; US 4851335
IC ICM **G01N033-48**
ICS **C12Q001-60**; **G01N033-483**
AB WO 9740376 A UPAB: 19971211
Assaying high density **lipoprotein** (HDL) **cholesterol** comprises reacting **cholesterol esterase** and **cholesterol oxidase** derived from the pancreas, bile acid or its salt, in the presence of albumin, and measuring the depletion or formation of compounds by these reactions.
USE - The method provides a high accuracy measurement of HDL **cholesterol** concentration in samples such as blood serum or blood plasma (claimed).
ADVANTAGE - The method is simple to perform, with no centrifugation of the blood serum or plasma necessary.
Dwg.1/11
FS CPI EPI
FA AB; GI; DCN
MC CPI: B01-D02; B04-B04D4; B04-L03A; B04-L05A; B11-C08E3; B12-K04A; D05-A02A; D05-A02C; D05-H09
EPI: S03-E04A5; S03-E14H4

L112 ANSWER 20 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1997-087397 [08] WPIX
DNC C1997-032192
TI Assay of cholesterol in high density **lipoprotein** fractions - using acyl-poly oxyethylene sorbitol ester and alkyl-poly oxyethylene ether, useful in clinical tests.
DC A96 B01 B04 D16
IN HASHIGUCHI, Y; IKEDA, M; **KAKUYAMA, T**; TABATA, H
PA (KOKU-N) KOKUSAI SHIYAKU KK; (**ITRE-N**) **INT REAGENTS CORP**
CYC 19
PI WO 9700971 A1 19970109 (199708)* JA 11p C12Q001-60 <--

RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: US
JP 09000299 A 19970107 (199711) 5p C12Q001-60 <--
ADT WO 9700971 A1 WO 1996-JP1602 19960612; JP 09000299 A JP 1995-154959 19950621
PRAI JP 1995-154959 19950621
REP 2.Jnl.Ref
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-44**; G01N033-92
AB WO 9700971 A UPAB: 19970407
Assay of cholesterol in high density **lipoprotein** (HDL) fractions comprises using acylpolyoxyethylene sorbitol ester (A) to eliminate the reaction prod. obtd. by preferential enzyme treatment of cholesterol in **lipoprotein** fractions other than HDL from the reaction system, then using alkylpolyoxyethylene ether (B). Enzyme activity towards cholesterol left in **lipoprotein** fractions other than HDL was suppressed, as well as progressing the reaction by acting the enzyme on cholesterol in HDL fractions. Also claimed is an assay kit for cholesterol in a low density **lipoprotein** (LDL) fraction comprising a reagent 1 contg. (A) and an enzyme, and a reagent 2 contg. (B).
USE - The assay of cholesterol in HDL fractions is useful in clinical tests.
ADVANTAGE - The process is simple, efficient and can treat many samples in a short time. Less opportunity for the sample to be in contact with hands reduces the danger of viral infections.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A10-E07; A10-E08B; A12-V03C2; B01-D02; B04-C03C; B04-L03A; B04-L05A; B11-C08E3; B12-K04A; D05-A02A; D05-A02C; D05-H09

L112 ANSWER 21 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1996-433959 [43] WPIX
CR 1996-454869 [45]
DNN N1996-365570 DNC C1996-136285
TI Quantitating **cholesterol** in low density **lipoprotein** for detecting arteriosclerosis - by removing high density **lipoprotein**, reacting with **cholesterol** ester hydrolase and **oxidase** and measuring e.g. hydrogen peroxide.
DC A89 B04 D16 S03
IN MIIKE, A; MIYAUCHI, K
PA (KYOW) KYOWA MEDEX KK; (KYOW) KYOWA MEDEX CO LTD
CYC 25
PI WO 9628734 A1 19960919 (199643)* JA 36p G01N033-92 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA CN JP KR MX US
AU 9649553 A 19961002 (199703) G01N033-92 <--
EP 763741 A1 19970319 (199716) EN 20p G01N033-92 <--
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 08527481 X 19970624 (199735) G01N033-92 <--
KR 97703531 A 19970703 (199829) G01N033-92 <--
US 5807696 A 19980915 (199844) C12Q001-60 <--
AU 702443 B 19990218 (199919) G01N033-92 <--
MX 9605627 A1 19980701 (200012) G01N033-92 <--
CN 1148430 A 19970423 (200109) G01N033-92 <--
ADT WO 9628734 A1 WO 1996-JP664 19960315; AU 9649553 A AU 1996-49553 19960315; EP 763741 A1 EP 1996-906036 19960315, WO 1996-JP664 19960315; JP 08527481 X JP 1996-527481 19960315, WO 1996-JP664 19960315; KR 97703531 A WO 1996-JP664 19960315, KR 1996-706421 19961113; US 5807696 A WO 1996-JP664 19960315, US 1996-737504 19961113; AU 702443 B AU 1996-49553 19960315; MX 9605627 A1 MX 1996-5627 19961115; CN 1148430 A CN 1996-190186 19960315
FDT AU 9649553 A Based on WO 9628734; EP 763741 A1 Based on WO 9628734; JP 08527481 X Based on WO 9628734; KR 97703531 A Based on WO 9628734; US 5807696 A Based on WO 9628734; AU 702443 B Previous Publ. AU 9649553, Based on WO 9628734
PRAI JP 1995-57307 19950316

REP DE 3208235; JP 3262967; JP 58165800; JP 6502911; WO 9201498
IC ICM **C12Q001-60; G01N033-92**
ICS **C12Q001-00; C12Q001-44; G01N033-53**
AB WO 9628734 A UPAB: 20010213
Quantitating **cholesterol** in a low density **lipoprotein** (LDL) comprises: (a) eliminating **cholesterol** in a high density **lipoprotein** (HDL) from an LDL-contg. sample; (b) treating the resulting sample with **cholesterol** ester hydrolase and a **cholesterol oxidase** or **cholesterol** oxidoreductase; and (c) measuring the amt. of hydrogen peroxide or reduced coenzyme.
USE - The process is useful in the detection of arteriosclerosis.
Dwg.1/3
FS CPI EPI
FA AB; GI; DCN
MC CPI: A12-V03C2; B01-D02; B04-B04D4; B04-C02C; B04-C02E1; B04-C03C; B04-L03A; B04-L03D; B04-L05C; B04-N05; B11-C08E; B12-K04A2; D05-H09
EPI: S03-E14H

L112 ANSWER 22 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1996-303865 [31] WPIX
DNC C1996-096561
TI Simple analysis of **cholesterol** in **lipo protein** fraction - comprises agglutinating **lipo protein** in serum, reacting with **cholesterol dehydrogenase** and measuring reaction rate.
DC B04 D16
PA (KOKU-N) KOKUSAI SHIYAKU KK
CYC 1
PI JP 08131195 A 19960528 (199631)* 7p C12Q001-32 <--
ADT JP 08131195 A JP 1994-318835 19941221
PRAI JP 1994-217716 19940912
IC ICM **C12Q001-32**
ICS **C12Q001-60**
AB JP 08131195 A UPAB: 19960808
Analysis of **cholesterol** in **lipo protein** fraction comprises agglutinating **lipo protein** one in serum and reacting **cholesterol dehydrogenase** with the product without removal of the agglutinated product and measuring the speed of the reaction.
ADVANTAGE - Analysis after simple procedure can be conducted.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B01-D02; B04-B01B; B04-B04D4; B04-L03D; B04-N02; B05-B01P; D05-H09

L112 ANSWER 23 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1996-280786 [29] WPIX
DNC C1996-089103
TI Measuring HDL **cholesterol** in serum or plasma - comprises treating plasma or serum with soln. contg. **lipoprotein** fraction, reacting with **cholesterol esterase** and **cholesterol oxidase**. etc..
DC B04 D16
PA (TOYM) TOYOBO KK
CYC 1
PI JP 08116996 A 19960514 (199629)* 8p C12Q001-60 <--
ADT JP 08116996 A JP 1994-262679 19941026
PRAI JP 1994-262679 19941026
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-28; C12Q001-44**
AB JP 08116996 A UPAB: 19960724
Measurement of HDL-**cholesterol** in serum or plasma comprises treating plasma or serum with soln. contg. **lipoprotein** fraction, reacting the prod. with **cholesterol esterase** and **cholesterol oxidase** in the presence of anion is

surfactant without liq. solid sepn. and measuring the amt. of produced hydrogen peroxide.
ADVANTAGE - Accurate measurement can be effected.
Dwg.0/3
FS CPI
FA AB; DCN
MC CPI: B01-D02; B04-B04B2; B04-B04D4; B04-L05A; B05-C08; B11-C08; B12-K04A; D05-H09

L112 ANSWER 24 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1995-352513 [46] WPIX
DNN N1995-262801 DNC C1995-154408
TI Assay for specific **lipoprotein** fraction components, esp. cholesterol - using an agglutination reaction on the **lipoprotein** fraction and a direct quantitative analysis.
DC B04 D16 S03
IN HASHIGUCHI, Y; IKEDA, M; **KAKUYAMA, T**
PA (**ITRE-N**) **INT REAGENTS CORP**; (KOKU-N) KOKUSAI SHIYAKU KK
CYC 4
PI EP 676642 A1 19951011 (199546)* EN 8p G01N033-92
R: DE FR GB
JP 07280812 A 19951027 (199601) 5p G01N033-92
JP 3107492 B2 20001106 (200059) 5p G01N033-92
ADT EP 676642 A1 EP 1995-105024 19950404; JP 07280812 A JP 1994-66998 19940405; JP 3107492 B2 JP 1994-66998 19940405
FDT JP 3107492 B2 Previous Publ. JP 07280812
PRAI JP 1994-66998 19940405
REP 01Jnl.Ref; JP 06242110
IC ICM G01N033-92
ICS G01N033-53
ICA C12Q001-60
AB EP 676642 A UPAB: 19951122
Method for the direct quantitative analysis of a component contained in a specific **lipoprotein** fraction (SLF) which is present in a biological sample comprises:(a) agglutinating the SLF;(b) leading a component, which is contained in **lipoprotein** fractions other than the SLF and is the same as the component that is contained in the SLF and to be analysed, to a different reaction system which does not take part in the quantitative analysis;(c) dissolving the once agglutinated SLF;(d) subjecting the SLF to a quantitative reaction, and(e) measuring a degree of change caused by the quantitative reaction to determine the amt. of the component in the SLF.
USE - The method is used esp. for the measurement of cholesterol in a low density **lipoprotein** (LDL) fraction (claimed). The measurement can be used for the prevention or diagnosis of e.g. arteriosclerosis or ischaemic heart diseases.
ADVANTAGE - Using the method, it is possible to measure the component by multi-channel analysis using an automatic analyser. The amt. of sample can be decreased and the method is suitable for simultaneous multi-item analysis.
Dwg.0/2
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-C03C; B04-G01; B04-L03A; B04-L03B; B04-L05A; B07-D08; B10-A09B; B10-A17; B11-C07B2; B12-K04A2; D05-H09
EPI: S03-E14H; S03-E14H1

L112 ANSWER 25 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1995-328288 [42] WPIX
DNC C1995-145677
TI Determn. of **cholesterol** in high density **lipoprotein** - by treatment with **cholesterol** oxidising enzymes then determn. of hydrogen peroxide or reduced coenzyme formed.
DC A96 B01 B04 D16
IN IRIE, T; MIIKE, A; MIYAUCHI, K; OHSAWA, S; SHUTOH, E; SUGIUCHI, H; UEKAMA,

K
PA (KYOW) KYOWA MEDEX CO LTD; (KYOW) KYOWA MEDEX KK
CYC 24
PI WO 9524502 A1 19950914 (199542)* JA 18p C12Q001-60 <--
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: AU CA CN KR US
AU 9518619 A 19950925 (199601) C12Q001-60 <--
TW 265413 A 19951211 (199609) G01N033-52 <--
EP 699767 A1 19960306 (199614) EN 11p C12Q001-60 <--
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
JP 08131197 A 19960528 (199631) 8p C12Q001-60 <--
JP 2600065 B2 19970416 (199720) 7p C12Q001-60 <--
AU 677514 B 19970424 (199725) C12Q001-60 <--
CN 1126495 A 19960710 (199749) C12Q001-60 <--
ES 2106694 T1 19971116 (199801) C12Q001-60 <--
US 5691159 A 19971125 (199802) 5p C12Q001-60 <--
EP 699767 A4 19970827 (199814) C12Q001-60 <--
US 5888755 A 19990330 (199920) C12Q001-60 <--
KR 188576 B1 19990601 (200055) C12Q001-60 <--
EP 699767 B1 20010816 (200147) EN C12Q001-60 <--
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
DE 69522159 E 20010920 (200163) C12Q001-60 <--
ADT WO 9524502 A1 WO 1995-JP378 19950308; AU 9518619 A AU 1995-18619 19950308; TW 265413 A TW 1995-102147 19950307; EP 699767 A1 EP 1995-910768 19950308, WO 1995-JP378 19950308; JP 08131197 A JP 1994-296137 19941130; JP 2600065 B2 JP 1994-296137 19941130; AU 677514 B AU 1995-18619 19950308; CN 1126495 A CN 1995-190280 19950308; ES 2106694 T1 EP 1995-910768 19950308; US 5691159 A WO 1995-JP378 19950308, US 1995-545722 19951102; EP 699767 A4 EP 1995-910768 19950308; US 5888755 A Div ex US 1995-545722 19951102, US 1997-966646 19971110; KR 188576 B1 WO 1995-JP378 19950308, KR 1995-704963 19951108; EP 699767 B1 EP 1995-910768 19950308, WO 1995-JP378 19950308; DE 69522159 E DE 1995-622159 19950308, EP 1995-910768 19950308, WO 1995-JP378 19950308
FDT AU 9518619 A Based on WO 9524502; EP 699767 A1 Based on WO 9524502; JP 2600065 B2 Previous Publ. JP 08131197; AU 677514 B Previous Publ. AU 9518619, Based on WO 9524502; ES 2106694 T1 Based on EP 699767; US 5691159 A Based on WO 9524502; US 5888755 A Div ex US 5691159; EP 699767 B1 Based on WO 9524502; DE 69522159 E Based on EP 699767, Based on WO 9524502
PRAI JP 1994-296137 19941130; JP 1994-37328 19940308; JP 1994-217224 19940912
REP 1.Jnl.Ref; EP 218127; EP 265933; JP 06269999; JP 63126498; EP 428980; US 4215993; US 4414326; WO 9201498
IC ICM **C12Q001-60; G01N033-52**
ICS **C12Q001-00; C12Q001-25; C12Q001-26; C12Q001-28; C12Q001-32; C12Q001-44**
AB WO 9524502 A UPAB: 19960417
Cholesterol in high density **lipoprotein** (HDL) in a biological specimen is determined by adding **cholesterol** ester hydrolase and **cholesterol oxidase** or **cholesterol dehydrogenase** (which may be chemically modified enzymes), in the presence of a reagent capable of aggregating **lipoproteins** other than HDL, then determining the hydrogen peroxide or reduced coenzyme produced.
The reagent capable of aggregating **lipoproteins** other than HDL is heparin or its salts, phosphotungstic acid or its salts, dextran sulphate or its salts, polyethylene glycol, cyclodextrin sulphate or its salts, an oligosugar sulphate or its salts, or a divalent metal salt.
USE - The process gives rapid and accurate determn. of HDL **cholesterol** in biological specimens such as blood for diagnosis of lipid-related disorders such as arteriosclerosis.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A12-V03C2; B01-D02; B04-B04D5; B04-C02B1; B04-C02C; B04-C02E1; B04-C03D; B04-L03A; B04-L03D; B04-L05A; B04-L05C; B04-N05; B05-A03B; B10-A04; B11-C08E; B12-K04A2; D05-A02A; D05-A02C; D05-H09

ABEQ US 5691159 A UPAB: 19980112
Cholesterol in high density **lipoprotein** (HDL) in a biological specimen is determined by adding **cholesterol** ester hydrolase and **cholesterol oxidase** or **cholesterol dehydrogenase** (which may be chemically modified enzymes), in the presence of a reagent capable of aggregating **lipoproteins** other than HDL, then determining the hydrogen peroxide or reduced coenzyme produced.
The reagent capable of aggregating **lipoproteins** other than HDL is heparin or its salts, phosphotungstic acid or its salts, dextran sulphate or its salts, polyethylene glycol, cyclodextrin sulphate or its salts, an oligosugar sulphate or its salts, or a divalent metal salt.
USE - The process gives rapid and accurate determn. of HDL **cholesterol** in biological specimens such as blood for diagnosis of lipid-related disorders such as arteriosclerosis.
Dwg.0/0

L112 ANSWER 26 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1993-249239 [31] WPIX
CR 1989-001279 [01]; 1989-341273 [47]; 1990-312257 [41]; 1991-044175 [06]; 1991-239897 [33]; 1993-367881 [46]; 1993-385599 [48]; 1994-271769 [33]; 1995-223629 [29]; 1995-245093 [32]
DNN N1993-191860 DNC C1993-110609
TI Determn. of high-density **lipoprotein cholesterol** in blood - using enzymatic assay device with means to remove low- and very low-density **lipoprotein**(s).
DC B04 D16 S03
IN ALLEN, M P; PATEL, P J; SINGH, P
PA (PATE-I) PATEL P J
CYC 1
PI US 5215886 A 19930601 (199331)* C12Q001-60 <--
ADT US 5215886 A CIP of US 1987-64883 19870622, CIP of US 1988-195881 19880519, CIP of US 1989-353910 19890518, CIP of US 1990-537045 19900524, US 1990-616628 19901121
FDT US 5215886 A CIP of US 4959324, CIP of US 4973549, CIP of US 4999287
PRAI US 1990-616628 19901121; US 1987-64883 19870622; US 1988-195881 19880519; US 1989-353910 19890518; US 1990-537045 19900524
IC ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-28; G01N021-00**
AB US 5215886 A UPAB: 19961211
Determn. of high density **lipoproteins** (HDL) **cholesterol** in blood samples is effected by: (a) passing the sample through a membrane to remove red blood cells without lysing them; (b) passing the resulting plasma through at least one porous filtration membrane; (c) collecting the plasma on a sample pad; (d) contacting the sample pad with an eluant source strip and a quantitation strip, where the sample pod and/or an adjacent portion of the quantitation strip contains immobilised **cholesterol esterase** and **cholesterol oxidase**, and the quantitation strip contains a dye precursor; (e) eluting the sample from the sample pad to the quantitation strip with an eluant contg. a peroxidase and an oxidisable coupling cpd. and (f) measuring the length of the resulting coloured region along the quantitation strip.
A reagent for selectively removing VLDL and LDL is bound to the membrane in (a) and/or a membrane in (b) and/or the sample pad, so that only HDL **cholesterol** remains available for enzymatics H2O2 generation and subsequent peroxidase-catalysed oxidn. of the coupling cpd. which then reacts with the dye precursor to form an intensely coloured dye. The length of the coloured region is thus proportional to the HDL **cholesterol** concn.
USE/ADVANTAGE - The assay may be used together with total **cholesterol** determn. for evaluating risks of heart disease. The assay is simple enough to be performed by untrained people, e.g. those wishing to monitor their own **cholesterol** levels.
Dwg.1A/2
FS CPI EPI

FA AB; GI
MC CPI: B01-D02; B04-B02C2; B04-B02C3; B04-B04A6; B04-B04D5; B11-C07B1; B12-K04A; D05-H09
EPI: S03-E14H1

L112 ANSWER 27 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1993-214331 [26] WPIX
CR 1995-178125 [23]
DNN N1993-164702 DNC C1993-095146
TI Rapid, direct determn. of low density **lipoprotein** - by pptn. in presence of nucleating agent, removal of other **lipoprotein**(s), redissolution of ppte. and assay.
DC A89 B04 S03
IN ERTINGSHAUSEN, G; LAW, W T; LAW, W; ERTINGHAUSEN, G
PA (ACTI-N) ACTIMED LAB INC
CYC 22

PI	WO 9312429	A1 19930624 (199326)*	EN	25p	G01N033-92	<--
	AU 9332796	A 19930719 (199344)			G01N033-92	<--
	US 5286626	A 19940215 (199407)		5p	C12Q001-44	<--
	NO 9402197	A 19940610 (199430)			G01N033-92	<--
	FI 9402763	A 19940610 (199431)			G01N000-00	<--
	EP 619885	A1 19941019 (199440)	EN		G01N033-92	<--
	JP 07501945	W 19950302 (199517)			C12Q001-44	<--
	AU 661097	B 19950713 (199535)			G01N033-92	<--
	EP 619885	B1 19961002 (199644)	EN	12p	G01N033-92	<--
	R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
	DE 69214297	E 19961107 (199650)			G01N033-92	<--

ADT WO 9312429 A1 WO 1992-US10809 19921211; AU 9332796 A AU 1993-32796 19921211; US 5286626 A US 1991-806183 19911213; NO 9402197 A WO 1992-US10809 19921211, NO 1994-2197 19940610; FI 9402763 A WO 1992-US10809 19921211, FI 1994-2763 19940610; EP 619885 A1 WO 1992-US10809 19921211, EP 1993-901285 19921211; JP 07501945 W WO 1992-US10809 19921211, JP 1993-511132 19921211; AU 661097 B AU 1993-32796 19921211; EP 619885 B1 WO 1992-US10809 19921211, EP 1993-901285 19921211; DE 69214297 E DE 1992-614297 19921211, WO 1992-US10809 19921211, EP 1993-901285 19921211
FDT AU 9332796 A Based on WO 9312429; EP 619885 A1 Based on WO 9312429; JP 07501945 W Based on WO 9312429; AU 661097 B Previous Publ. AU 9332796, Based on WO 9312429; EP 619885 B1 Based on WO 9312429; DE 69214297 E Based on EP 619885, Based on WO 9312429
PRAI US 1991-806183 19911213
REP EP 13814; EP 174378; EP 35211; EP 428980; US 3814255; US 4126416; WO 7900306
IC ICM **C12Q001-44; G01N033-92**
ICS C12M003-04; **C12Q001-25; C12Q001-26; C12Q001-37; C12Q001-60; G01N031-00; G01N033-68**

AB WO 9312429 A UPAB: 19950626
Direct detrmn. of low density **lipoprotein** (LDL) in a fluid comprises (1) adding a polyanionic cpd. (I), divalent metal salt (II) and nucleating agent (III) to the sample to form clusters of LDL; (2) adding enzymes to destroy high and very low density **lipoproteins** selectively; (3) redissolving the LDL and (4) determining its concn. conventionally.

Pref., (I) is dextran sulphate; heparin; phosphotungstic acid or poly(vinyl sulphate). (II) is a Ca, Mn or Mg salt and (III) is porous Fe oxide (opt. having (I) coated on it).

LDL is detected enzymatically after redissolution in EDTA-NaCl (esp. a soln. of 2.5-6% NaCl and 0.05-0.1% EDTA); protease (75-100 units per test) or MgCl2 (50-200mM). Redissolved LDL is pref. reacted with **cholesterol oxidase** (CO) and CE, and the H2O2 formed determined colorimetrically.

USE/ADVANTAGE - Provides a simple, sensitive and reliable determn. of LDL, usually within 2 min., (III) ensures rapid pptn. of LDL in a form which is stable against surfactants and **cholesterol esterase** (CE).
Dwg.1/2

Dwg.1/2
Dwg.1/2
FS CPI EPI
FA AB; GI; DCN
MC CPI: A12-L; A12-W11L; B04-B01B; B04-B02C1; B04-B04A6; B04-C02C; B04-C02E1; B04-C03B; B05-A01B; B05-A03A; B05-B02A3; B11-C07B1; B11-C08E3; B12-K04
EPI: S03-E14H5
ABEQ US 5286626 A UPAB: 19940329
Determn. of low density **lipoprotein** (`LDL') comprises (I) selective pptn. of LDL from a fluid test sample by addn. of a mixt. of a polyanionic cpd., a divalent metal salt and a nucleating agent, forming LDL clusters; (II) addn. of an enzyme (cholesteroloxidase and/or cholesterolesterase) that removes high density **lipoprotein** from the supernatant liquors; and (III) resolubilisation of the LDL with a protease; and addn. of a reagent for the determn. of LDL. Typical selective LDL pptn. agents are dextran sulphate, heparin, phosphotungstic acid and polyvinyl sulphate. Pref. divalent salts are Ca, Mg and Mn salts; and nucleation aids include finely divided stainless steel, silica or polymethyl methacrylate.
USE/ADVANTAGE - Process facilitates clinical analysis and diagnosis, e.g. atherosclerosis and allows distinction between LDL and HDL contents.
Dwg.0/2
ABEQ EP 619885 B UPAB: 19961104
A process for direct determination of low density **lipoprotein** in a fluid sample comprising forming clusters of low density **lipoprotein** by adding to said sample an LDL precipitating agent comprising a polyanionic compound, a salt of a divalent metal and a nucleating agent; adding an enzyme to selectively consume high density **lipoprotein** and very low density **lipoprotein** from said fluid sample while the clusters of low density **lipoprotein** remain intact; and resolubilising the low density **lipoprotein** and determining the amount of low density **lipoprotein** in the sample.
Dwg.0/2

L112 ANSWER 28 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1990-264496 [35] WPIX
DNN N1990-204589 DNC C1990-114408
TI Reagent for determining free fatty acid - comprises alkylene oxide system nonionic surfactant as inhibitor for **cholesterol esterase, lipase** and/or **lipo-protein lipase.**
DC A96 B04 D16 S03
PA (NIHS) NIPPON SUFACTANT KOGYO K; (SINO-N) SINOTEST KK
CYC 1
PI JP 02184759 A 19900719 (199035)* 5p
JP 2886542 B2 19990426 (199922) 7p G01N033-92 <--
ADT JP 02184759 A JP 1989-3964 19890110; JP 2886542 B2 JP 1989-3964 19890110
FDT JP 2886542 B2 Previous Publ. JP 02184759
PRAI JP 1989-3964 19890110
IC C12O001-44; **G01N033-92**
ICM **G01N033-92**
ICS C12O001-44; **C12Q001-44**
AB JP 02184759 A UPAB: 19930928
A reagent for determining free fatty acid comprises using alkylene oxide system nonionic surfactant as inhibitor for **cholesterol esterase, lipase** and/or **lipoprotein lipase** mixed from other examination items.
USE ADVANTAGE - Useful for determining accurately free fatty acid(NEFA) in living body component. The reagent is esp. useful in the case of determining examination items by washing and regenerating the same reaction vessel or a reagent injection nozzle. Even when **cholesterol esterase, lipase** and/or **lipoprotein lipase** used for the determination of **cholesterol**, free **cholesterol** or triglyceride are mixed

in the nEFA determination reaction system, analytical error by the hydrolytic activity of these enzymes can be prevented by the inhibiting action of the alkylene oxide system nonionic surfactant to obtain accurate analytical result of NEFA.
0/0

FS CPI EPI
FA AB; DCN
MC CPI: A12-V03C2; B04-B04F; B04-C03C; B10-C04E; B11-C08E3; B12-K04; D05-H09
EPI: S03-E09E; S03-E14H9

L112 ANSWER 29 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1990-218740 [29] WPIX
DNN N1990-169759 DNC C1990-094452
TI Determn. of net high density **lipoprotein cholesterol** content of serum - by pptn. of other **lipoprotein**(s) then assaying **cholesterol** in **lipase** treated and untreated samples, for assessing risk of vascular disease.
DC B04 D13 S03
IN MAINES, R Q
PA (MAIN-I) MAINES R Q
CYC 14
PI EP 378395 A 19900718 (199029)*
R: AT BE CH DE ES FR GB LI LU NL SE
CA 2007645 A 19900713 (199039)
EP 378395 A3 19920701 (199333)
US 5453358 A 19950926 (199544) 5p C12Q001-60 <--
EP 378395 B1 19960814 (199637) EN 12p C12Q001-60 <--
R: AT BE CH DE DK ES FR GB LI LU NL SE
DE 69028023 E 19960919 (199643) C12Q001-60 <--
ADT EP 378395 A EP 1990-300287 19900110; EP 378395 A3 EP 1990-300287 19900110; US 5453358 A Cont of US 1989-297080 19890113, US 1992-941669 19920908; EP 378395 B1 EP 1990-300287 19900110; DE 69028023 E DE 1990-628023 19900110, EP 1990-300287 19900110
FDT DE 69028023 E Based on EP 378395
PRAI US 1989-297080 19890113; US 1992-941669 19920908
REP NoSR.Pub; 6.Jnl.Ref; EP 271963; GB 2097255; JP 51139634; JP 61118323; JP 62263119; US 4186251; US 4215993; US 4414326; WO 8905354
IC A61K031-68; **C12Q001-60**; **G01N033-92**
ICM **C12Q001-60**
ICS A61K031-23; A61K031-68; A61K031-685
ICA G01N033-92
AB EP 378395 A UPAB: 19931119
Determin. of the net HDL **cholesterol** content of blood serum comprises (1) treating a sample with a pptg. agent which combines with LDL and VLDL particles in the serum; (2) centrifuging to remove ppte., leaving supernatant contg. HDL and free **cholesterol** (ch); (3) treating supernatant with enzyme which de-esterifies (ch), so as to break down HDL particles into (Ch) and fatty acid; (4) treating with (Ch) **oxidase** to oxidise all (Ch)to H2O2 and cholest-4-en-3-one; (5) treating with peroxidase (POD), 4-amine-antipyrine (4AAP) and chromogen to convert the H2O2 producedto a quinone imine (QI); (6) measuring the absorbance of QI at a suitable wavelength; (7) repeating steps (3-6) on at least one (Ch)-contg. standard; (8) calculating the concn. of HDL and non-pptd. (Ch) from the equation (HDL + free (Ch) concn.) = S.C. x 2As/Ast. (As and Ast = absorbance of sample and standard respectively; S.C = concn. of the standard); (9) repeating steps (4-6) on separate samples of supernatant and standard, (10) calculating the non-pptd. free (Ch) concn. from the eqn. free (Ch) concn. = S.C. x 2As/Ast and (11) calculating net HDL **cholesterol** by subtraction of results from steps (8) and (10).

Also new is an emulsified diet supplement for increasing % HDL **cholesterol** in the blood consisting of a polyunsatd. lipid, phospholipid contg. essential fatty acids; a polysaccharide and an antioxidant.

USE - The measurement of HDL **cholesterol** is used to diagnose (and assess the risk of) vascular disease and atherosclerosis. The new diet supplement reduces the risk of such diseases. @(9pp

Dwg.No.0/0)
0/0
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B03-F; B03-H; B04-B01B; B04-B01C1; B04-B02C2; B04-B02C3; B04-B04D4; B04-C02D; B04-C03D; B05-B01P; B07-D08; B10-C03; B11-C07B1; B12-H03; B12-K04A; D03-C; D05-A02A; D05-A02C
EPI: S03-E14H
ABEQ US 5453358 A UPAB: 19951109
Determining the level of risk for a patient to vascular disease comprises (a) determining the net percentage of HDL **cholesterol** of blood serum by (i) precipitating LDL and VLDL fractions from a blood serum sample, (ii) sepg. and isolating the precipitant from a supernatant, (iii) treating the supernatant with **cholesterol esterase** or **lipase** to de-esterify HDL **cholesterol**, (iv) converting all of the **cholesterol** in the supernatant to H2O2 and cholest-4-en-3-one, (v) converting all H2O2 to quinoneimine in the supernatant, (vi) determining the amt. of quinoneimine in the supernatant, (vii) converting the amt. into a concn. of HDL **cholesterol** and free **cholesterol**, (viii) effecting steps (iv)-(vi) on a 2nd sample of the supernatant from step (ii) and converting the amt. into a concn. of free **cholesterol**, and (ix) determining net HDL **cholesterol** by subtracting the concn. of free **cholesterol** from step (viii) from the concn. of HDL **cholesterol** and free **cholesterol** from step (vii), and (b) determining an increased risk of vascular disease for patients exhibiting concns. of net HDL **cholesterol** that are less than 15% of total serum **cholesterol**.

USE - The method is also used for diagnosing atherosclerosis.

Dwg.0/0
ABEQ EP 378395 B UPAB: 19960918
A method of determining the net concentration of **cholesterol** associated with HDL particles in blood serum, comprising the steps of (a) treating a sample of the serum with a precipitating agent which will combine with the LDL and VLDL particles in the serum; (b) centrifuging the treated serum sample until the LDL- and VLDL-containing precipitate is spun down, leaving a supernatant liquid having HDL associated **cholesterol**, and free supernatant **cholesterol**; (c) separating the supernatant liquid from the precipitate; (d) treating a fist sample of the supernatant liquid with **cholesterol esterase** or **lipase** in sufficient quantity to break down all the HDL particles into fee **cholesterol** and fatty acids, resulting in a **cholesterol**-containing fluid having no esterified **cholesterol**; (e) treating the **cholesterol**-containing fluid with **cholesterol oxidase** in sufficient quantity to oxidise all the **cholesterol** present, forming hydrogen peroxide and cholest-4-en-3-one; (f) further treating the fluid with peroxidase, 4-aminoantipyrine and a chromogen in sufficient amounts to completely react all the hydrogen peroxide formed in step (e) to produce a quinoneimine; (g) measuring the electromagnetic radiation absorbance of the quinonimine-containing fluid produced in step (h) at a wavelength at which the quinonimine exhibits significant absorbance; (i) performing steps (d) through (g) on each of one or more standard **cholesterol** -containing fluids; (j) calculating the combined concentration of **cholesterol** associated with the HDL particles, and free supernatant **cholesterol** according to the formula (**cholesterol** associated with HDL + free supernatant **cholesterol** concentration) = standard concentration x 2(Asupernatant)/A standard, where Asupernatant represents the absorbance measured for the supernatant and Astandard represents the absorbance measured for the standard **cholesterol**-containing fluid; (k) performing steps (e) through (g) on a second sample of the supernatant liquid, and one or more standard **cholesterol**-containing fluids, (l) calculating the concentration of free supernatant **cholesterol** from the absorbance values obtained in step (j) according to the formula free supernatant **cholesterol** concentration =

2(Asupernatant)/Astandard x standard concentration; and (m) calculating the net concentration of **cholesterol** associated with HDL particles from the results of steps (i) and (k) according to the formula net concentration of **cholesterol** associated with HDL = (**cholesterol** associated with HDL + free supernatant **cholesterol** concentration) - free supernatant **cholesterol** concentration.
Dwg.0/0

L112 ANSWER 30 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1989-357528 [49] WPIX
DNN N1989-271750 DNC C1989-158494
TI Determn. of **cholesterol**-contg. **lipo protein** fractions - by electrophoresis on a thin-layer carrier matrix.
DC B04 D16 S03 S05
IN AUFENANGER, J
PA (AUFE-I) AUFENANGER J; (IMMO) IMMUNO CHEM MEDIZINISCHE PROD; (IMMO) IMMUNO AG; (IMMO) IMMUNO CHEM MEDIZINISCHE PROD AG
CYC 11
PI DE 3817747 A 19891130 (198949)* 6p
EP 344580 A 19891206 (198949) DE
R: AT BE CH DE FR GB IT LI NL SE
EP 344580 B1 19941228 (199505) DE 9p C12Q001-60 <--
R: AT BE CH DE FR GB IT LI NL SE
DE 58908816 G 19950209 (199511) C12Q001-60 <--
US 5385828 A 19950131 (199511)# 6p C12Q001-60 <--
ADT DE 3817747 A DE 1988-3817747 19880525; EP 344580 A EP 1989-109261 19890523; EP 344580 B1 EP 1989-109261 19890523; DE 58908816 G DE 1989-508816 19890523, EP 1989-109261 19890523; US 5385828 A Cont of US 1989-359800 19890601, US 1992-981992 19921124
FDT DE 58908816 G Based on EP 344580
PRAI DE 1988-3817747 19880525
REP 4.Jnl.Ref; DE 3640349; EP 183381; JP 60009498; WO 8200833; 06Jnl.Ref
IC C07K003-14; C07K015-16; **C12Q001-60**; **G01N009-36**; **G01N027-30**; **G01N033-92**
ICM **C12Q001-60**
ICS C07K003-14; C07K015-16; **C12Q001-26**; **C12Q001-34**; **C12Q001-44**; **G01N009-36**; **G01N027-30**; **G01N033-92**
AB DE 3817747 A UPAB: 19930923
(A) In a new procedure for the determination of the relative amounts of all **cholesterol**-contg. **lipoproteins** in body fluids in which the **lipoproteins** of an aliquot of body fluid are separated electrophoretically on a carrier matrix and subsequently detected by means of an enzymatic reaction comprising incubation of the carrier matrix with cholesterolase and **cholesterol dehydrogenase**, leading to the formation of a detectable complex, and the relative amounts of the different **lipoprotein** classes are determined, the electrophoresis is carried out on a thin-layer matrix.
(B) In a new procedure for the determination of the concentration of all **cholesterol**-contg. **lipoproteins** in body fluids, the relative amounts determined by the above procedure are expressed in proportion to the total **cholesterol** concentration of the body fluid.
USE/ADVANTAGE - Determination of low- and high-density **lipoprotein cholesterol** as an aid to the diagnosis of susceptibility to atherosclerosis and cardiac infarction. The procedure is rapid, reliable and reproducible, and gives results in archivable form.
FS CPI EPI
FA AB; DCN
MC CPI: B01-D02; B04-B01B; B04-B02C2; B04-B02C3; B04-B04A6; B04-B04D4; B04-C02D; B07-D13; B11-C07B2; B11-C08D1; B11-C08E3; B12-K04A2; D05-A01A1; D05-A01B1; D05-A01B3; D05-A01C1; D05-H09
EPI: S03-E03X; S03-E14H; S05-C
ABEQ EP 344580 B UPAB: 19950207
Process for the determination of the relative quantities of all

lipoproteins containing **cholesterol** in body fluids, wherein the **lipoproteins** of an aliquot of the body fluid are electrophoretically separated on a supporting matrix and are then detected by an enzymatic treatment which comprises incubation of the supporting matrix with the enzymes **cholesterol esterase** and **cholesterol dehydrogenase** together with the co-enzyme nicotinamide-adenine dinucleotide and leads to the formation of a detectable formazan complex and the relative quantities of the various classes of **lipoproteins** are determined, characterised in the electrophoresis is performed on a thin layer matrix with a thickness of 0.1 to 0.5 mm.
Dwg.0/0

ABEQ US 5385828 A UPAB: 19950322
Cholesterol-contg. **lipoprotein** in very low density, low density and high density **lipoprotein** forms in a body fluid are simultaneously determined w.r.t. other/total amts. of **cholesterol**-contg. **lipoproteins**.
Process comprises (a) electrophoretically sepg. the **lipoproteins** from each other on a thin layer carrier matrix contg. 0.5 wt.% or less of albumin; (b) incubating the matrix after sepn. using a developer soln. contg. 0.02-2.0 U per ml. of **cholesterol esterase** and 0.07-1.0 U per ml. of **cholesterol dehydrogenase**; and (c) determining relative amts. of the **lipoproteins**.
ADVANTAGE - Thin layer matrixes are very easy to handle and to record.
Dwg.0/0

L112 ANSWER 31 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1988-162300 [24] WPIX
DNN N1988-123982 DNC C1988-072326
TI Determination of **cholesterol** partition into protein fractions - by gel electrophoresis followed by staining with enzyme soln. contg. **cholesterol esterase** and **cholesterol dehydrogenase**.
DC B04 D16 J04 S03
IN AUFENANGER, J
PA (AUFE-I) AUFENANGER J; (IMMO) IMMUNO AG
CYC 1
PI DE 3640349 A 19880609 (198824)* 3p
DE 3640349 C2 19931104 (199344) 3p C12Q001-60 <--
ADT DE 3640349 A DE 1986-3640349 19861126; DE 3640349 C2 DE 1986-3640349 19861126
PRAI DE 1986-3640349 19861126
IC **C12Q001-60; G01N027-26; G01N033-92**
ICM **C12Q001-60**
ICS **G01N027-26; G01N033-68; G01N033-92**
AB DE 3640349 A UPAB: 19930923
In the quantitative determination of the partition of **cholesterol** into protein fractions after their gel electrophoretic separation, after the electrophoresis, the gel is incubated in a staining soln. which is an enzyme contg. **cholesterol esterase** and **cholesterol dehydrogenase** in addition to other substrates.
Enzyme substrate soln. for carrying out this procedure contains 57 mM tris buffer, 0.5 mM NAD, 0.1 mM EDTA, 0.16 mM INT, 0.03 mM PMS, 0.14 U/ml **cholesterol dehydrogenase** and 0.4 U/ml **cholesterol esterase**.
USE/ADVANTAGE - Determination of **cholesterol** in protein fractions for diagnostic purposes in high-risk patients, e.g. heart infarct patients or cardiac valve patients. The determination is affected by neither fibrinogen nor lipolysis (as e.g. occurs in patients treated with heparin).
0/0
FS CPI EPI
FA AB; DCN

MC CPI: B01-D02; B04-B02C2; B04-B02C3; B04-B03B; B04-B04A6; B06-D14; B07-D13; B10-B01B; B11-C08D1; B12-K04A2; D05-C04; D05-H09; J04-B01B
EPI: S03-E03X; S03-E14H9

ABEQ DE 3640349 C UPAB: 19931213
Determn. of the distribution of **cholesterol** in protein fractions obtd. after gel electrophoresis comprises incubation of each fraction with a soln. contg. cholesterolesterase (0.4 units/cm3), cholesteroldehydrogenase (0.14 units/cm3), nictoinamideadeninedinucleotide (0.0005 mol/dm3), EDTA (0.0001 mol/dm3), TRIS buffer (0.057 mol/dm3) and a chromogen (0.016 mol/dm3), e.g. 2-(4-iodophenyl)-3 -(4-nitrophenyl-5 -phenyltetrazolium chloride or 2,2'-di(4-nitropohenyl) -5,5'diphenyl-3-3'-(3,3' -dimethoxybiphenylene-4,4') -ditetrazolium dichloride; and the intensity of colour at 570 nm is measured.
USE - The process is applicable to the clinical analysis of **cholesterol** in **lipoprotein** fractions.
Dwg.0/0

L112 ANSWER 32 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1988-121051 [18] WPIX
DNN N1988-091887 DNC C1988-054205
TI Specific measurement of high density **lipoprotein** **cholesterol** in serum - by incubation with **esterase** and **oxidase**, and kinetic monitoring of hydrogen peroxide formation.
DC A96 B04 D16 S03
IN KERSCHER, L; PAUTZ, B; TRUNK, G; ZIEGENHORN, J
PA (BOEF) BOEHRINGER MANNHEIM GMBH; (BOEF) OEHRINGER MANNHEIM GMBH
CYC 20
PI EP 265933 A 19880504 (198818)* DE 16p
R: AT BE CH DE ES FR GB GR IT LI LU NL SE
DE 3636851 A 19880511 (198820)
AU 8780446 A 19880505 (198826)
JP 63126498 A 19880530 (198827)
FI 8704749 A 19880430 (198831)
US 4892815 A 19900109 (199010) 11p C12Q001-44 <--
CA 1309645 C 19921103 (199250) C12Q001-60 <--
EP 265933 B1 19930203 (199305) DE 19p C12Q001-60 <--
R: AT BE CH DE ES FR GB GR IT LI LU NL SE
DE 3784004 G 19930318 (199312) C12Q001-60 <--
FI 90882 B 19931231 (199404) C12Q001-60 <--
JP 07034760 B2 19950419 (199520) 10p C12Q001-60 <--
ADT EP 265933 A EP 1987-115841 19871028; DE 3636851 A DE 1986-3636851 19861029; JP 63126498 A JP 1987-269522 19871027; US 4892815 A US 1987-107467 19871006; CA 1309645 C CA 1987-549035 19871009; EP 265933 B1 EP 1987-115841 19871028; DE 3784004 G DE 1987-3784004 19871028, EP 1987-115841 19871028; FI 90882 B FI 1987-4749 19871028; JP 07034760 B2 JP 1987-269522 19871027
FDT DE 3784004 G Based on EP 265933; FI 90882 B Previous Publ. FI 8704749; JP 07034760 B2 Based on JP 63126498
PRAI DE 1986-3636851 19861029
REP A3...8949; EP 44432; EP 53692; EP 88420; No-SR.Pub
IC ICM **C12Q001-44**; **C12Q001-60**
ICS **C12Q001-26**; **G01N033-52**; **G01N033-68**; **G01N033-92**
AB EP 265933 A UPAB: 19950530
Specific determination of HDL-**cholesterol** in presence of the LDL fraction of serum **lipoproteins** comprises treating with **cholesterol esterase** (CE) to release **cholesterol** which is oxidised with **cholesterol oxidase** (CO) and O2 to form H2O2, then kinetic measurement of H2O2 formation or of O2 consumption.
The new feature is that measurement is carried out at 2-15 min after start of **oxidase** reaction at 20-40 deg C for a predetermined time interval. During measurement concns maintained in the reaction soln are: CE 0.05-30 u/ml; Co 0.1-50 U/ml; bile acid surfactant 1-20 mM and nonionic surfactant 0.1-10 g/l, while pH is 5-9. Also new is a reagent which provides the specified concns. of CO, CE and surfactants, plus pH

5-9 buffer and a system for photometric measurement of H2O2.
ADVANTAGE - The HDL component is measured with a simple reagent in a single step, and the same sample can also be used to provide a measure of total **cholesterol**.
0/5
Dwg.0/5
FS CPI EPI
FA AB; DCN
MC CPI: A12-V03C2; B01-D02; B04-B01B; B04-B02C2; B04-B02C3; B04-B04D4; B04-C03C; B05-C08; B11-C07B2; B11-C08E3; B12-K04A; D05-A02A; D05-A02C; D05-H09
EPI: S03-E14H4
ABEQ EP 265933 B UPAB: 19930923
Process for the specific determination of the **cholesterol** of the HDL fraction in the presence of the LDL fraction of the **lipoproteins** of the serum by action of **cholesterol esterase** for the liberation of the **cholesterol** and oxidation of the liberated **cholesterol** with **cholesterol oxidase** and oxygen with the formation of H2O2 and kinetic measurement of the H2O2 formation or of the oxygen consumption, characterised in that one uses the **cholesterol esterase** from pancreas and that the measurement is carried out within 2 minutes to 15 minutes after the start of the **oxidase** reaction at a temperature of 20 to 40 deg.C during a predetermined time interval and during the measurement there is maintained in the reaction solution a **cholesterol esterase** concentration of 0.05 to 30 U/ml, a **cholesterol oxidase** concentration of 0.1 to 50 U/ml, a concentration of a tenside of the bile acid group of 1.0 to 20 mMol/l, a concentration of a non-ionic detergent of 0.1 to 10 g/l and a pH value of 5 to 9.
0/5
ABEQ US 4892815 A UPAB: 19930923
High density **lipoprotein** (HDL) **cholesterol** is specifically determined in a serum **lipoprotein** contg. low density **lipoprotein** (LDL) in a sample, by adding (i) pancreatic **cholesterol esterase** to liberate **cholesterol** from its esters; (ii) **cholesterol oxidase** and O2 to oxidise liberated **cholesterol** and form H2O2; and (iii) kinetically measuring H2O2-formation or O2-consumption within 2-15 mins. as a measurement of HDL **cholesterol**.
Measurement and reaction take place at 20-40 deg.C during a predetermined time interval using a maintained **esterase** concn. of 0.05-30 U per ml., **oxidase** concn. of 0.1-50 U per ml., tenside of bile acid gp. at 1.0-20 mmol. per l., and 0.1-10 g per l. of non-ionic detergent at pH 5-9.
USE - In treatment of hypercholesterolaemic and hypertriglyceridaemia in atherosclerosis or cardiac infarct.

L112 ANSWER 33 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1987-296558 [42] WPIX
DNN N1987-221673 DNC C1987-126376
TI Automatic clinical analytical system - used for analysis of distribution of **cholesterol** in **lipoprotein** sub-fraction in human blood.
DC A96 B04 D16 J04 S03
PA (TOYJ) TOYO SODA MFG CO LTD; (TOYJ) TOSOH CORP
CYC 1
PI JP 62209358 A 19870914 (198742)* 7p
JP 07018855 B2 19950306 (199514) 5p G01N030-88 <--
ADT JP 62209358 A JP 1986-51490 19860311; JP 07018855 B2 JP 1986-51490 19860311
FDT JP 07018855 B2 Based on JP 62209358
PRAI JP 1986-51490 19860311
IC **G01N030-88; G01N033-92**
ICM **G01N030-88**
ICS **G01N030-46; G01N030-48; G01N033-92**

AB JP 62209358 A UPAB: 19930922
System comprises immobilising more than 5 wt.% of **cholesterol** ester hydrase and/or **cholesterol oxidase** on hydrophilic porous high polymer granular matter of less than 20 micro in particle size, packing it in a pressure-resisting glass column, connecting column after a pressure-resisting sepn. glass column packed with hydrophilic porous high polymer granular matter, and assembling them in a high performance liq. chromatograph having no metallic surface.
The carrier for immobilising the enzymes is pref. porous granules consisting of polyacrylic acid copolymer and polyvinyl alcohol copolymer.
USE/ADVANTAGE - System is useful for the automatic analysis of the distribution of **cholesterol** in **lipoprotein** subfraction in human blood. In the system, the life of the immobilised enzyme is long and the enzymatic activity of the enzyme immobilised on the porous granules can be effectively exhibited, consequently stable analytical results can be obtd. for long period.
0/2
FS CPI EPI
FA AB; DCN
MC CPI: A04-F04; A10-E09B; A12-L04; A12-V03C2; A12-W11L; B01-D02; B04-B02C; B04-B04A6; B04-B04D5; B04-C03B; B11-C08D2; B12-K04A; D05-A01A2; D05-A01B1; D05-A01B3; J04-B01
EPI: S03-E09C5; S03-E14H1

L112 ANSWER 34 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1987-087376 [13] WPIX
DNN N1987-065510 DNC C1987-036259
TI HDL **cholesterol** specific determination in serum or plasma - by incubation with **cholesterol oxidase** and a nonionic detergent.
DC A96 B04 D16 S03
IN KERSCHER, L; PAUTZ, B; SIEDEL, J; ZIEGENHORN, J
PA (BOEF) BOEHRINGER MANNHEIM GMBH
CYC 19
PI DE 3533288 A 19870326 (198713)* 8p
EP 218127 A 19870415 (198715) DE 11p
R: AT BE CH DE FR GB IT LI LU NL SE
AU 8661163 A 19870319 (198718)
JP 62069999 A 19870331 (198718)
FI 8603752 A 19870319 (198727)
DK 8604459 A 19870319 (198731)
ES 2001417 A 19880516 (198921)
US 4851335 A 19890725 (198937) 7p
EP 218127 B 19891213 (198950) DE
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3667492 G 19900118 (199004)
KR 8903948 B 19891013 (199040)
JP 06016720 B2 19940309 (199413) C12Q001-60 <--
ADT DE 3533288 A DE 1985-3533288 19850918; EP 218127 A EP 1986-112875 19860910; JP 62069999 A JP 1986-218274 19860918; ES 2001417 A ES 1986-1650 19860905; US 4851335 A US 1986-908031 19860916; EP 218127 B EP 1986-112875 19860918; JP 06016720 B2 JP 1986-218274 19860918
FDT JP 06016720 B2 Based on JP 62069999
PRAI DE 1985-3533288 19850918
REP 2.Jnl.Ref; EP 91026; JP 57163500; US 4105521; US 4275152; US 4414326
IC **C12Q001-60; G01N033-92**
ICM **C12Q001-60**
ICS **C12Q001-26; C12Q001-44; G01N033-92**
AB DE 3533288 A UPAB: 19930922
A specific determination of HDL-**cholesterol** in serum or plasma by incubation with a **cholesterol** detection system contg. **cholesterol oxidase** and **cholesterol esterase** in buffered aq. medium and measurement of a prod. of the **cholesterol oxidase** reaction or oxygen consumption comprises (1) an incubation carried out in the presence of a bile acid or bile acid deriv. salt or of dioctyl sulphosuccinate, (2) carrying out a

first measurement, (3) a non-ionic detergent contg. polyethylene oxide gps. or a sec. alkanesulphonate is added and the mixt. is again incubated, (4) a second measurement is carried out, and (5) the HDL-**cholesterol** amt. is determined from the difference between the first and second measurements.

New reagent of the new specific determination contains amts. w.r.t. ready-to-use aq. soln. 0.1-10 U/ml **cholesterol esterase**, 0.005-10 U/ml **cholesterol oxidase**, 20-500 mmol/l buffer substance pH 6.0-8.0, 0.2-20 mmol/l bile acid or bile acid deriv. salt or dioctyl-sulphosuccinate and, separately, 0.02-2% non-ionic detergent contg. polyethylene oxide gps. or sec. alkanesulphonate and, opt. 0.05-2% 1-3C alcohol.

USE/ADVANTAGE - Determination of the fraction of **cholesterol** bound in HDL- in the diagnosis of atherosclerosis or of the risk of cardiac infarct. HDL-**cholesterol** can be determined directly without previous sepn. of LDL-**cholesterol** esters, VLDL-**cholesterol** esters, VLDL-**cholesterol** and chylomicron-**cholesterol** from the specimen.

0/2

FS CPI EPI
FA AB; DCN
MC CPI: A12-V03C2; A12-W11L; B01-D02; B04-B02C2; B04-B02C3; B04-B04D4; B04-B04H; B04-C03C; B10-A09B; B11-C07B2; B12-K04A2; D05-H09
EPI: S03-E14H

ABEQ EP 218127 B UPAB: 19930922
Process for the specific determination of HDL **cholesterol** in serum or plasma by incubation with a **cholesterol** detection system, containing **cholesterol oxidase** and cholesteriol **esterase** in buffered aqueous medium, and measurement of a porudtc of the **cholesterol oxidase** reaction or of thge oxygen consumption, characterised in that one incubates the serum or plasma directly, without previous separation from other **cholesterol**-containing **lipoproteins**, in the presence of a bile acid or bile acid derivative salt or of dicotylsulphosuccinate then carries out a first measurement, subsequently adds thereto a nonionic, polyethylene oxide group-containing detergent or a secondary alkane sulphonate, again incubates and then carries out a second measurement and determines the amount of HDL **cholesterol** from the difference of the first and second measurement.

ABEQ US 4851335 A UPAB: 19930922
Determination of **cholesterol** bound to high density **lipoprotein** comprises incubating a serum or plasma sample with a **cholesterol esterase**, a **cholesterol oxidase** and suitable buffer agents; followed by measurement of the oxygen consumed or the amt. of prod. formed by **cholesterol oxidase**. The process is improved by conducting these enzyme reactions in the presence of a bile acid salt or bile acid deriv. salt, or dioctyl sulphosuccinate, and determining the **cholesterol** liberated; then adding a nonionic poly(ethylene oxide) type of detergent, or a sec.alkanesulphonate, incubating, and again determining the **cholesterol** the **cholesterol** bound to high density **lipoprotein** is liberated; the difference between these two determinations.

USE - The process is an aid for rapid clinical analysis and the diagnosis of atherosclerosis or myocardial infarction.

L112 ANSWER 35 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1986-249486 [38] WPIX
DNN N1986-186363 DNC C1986-107471
TI Analytical element useful for blood etc. - comprises carrier with reagent layer and porous layer contg. enzyme used to convert component into detectable substance.
DC A96 B04 J04 S03
PA (CHUS) CHUGAI PHARM CO LTD; (KONS) KONISHIROKU PHOTO IND CO LTD; (KONS) KONICA KK
CYC 3

PI JP 61177997 A 19860809 (198638)* 10p
US 4914020 A 19900403 (199019)
JP 06073472 B2 19940921 (199436) 8p C12Q001-00 <--
ADT JP 61177997 A JP 1985-19324 19850205; US 4914020 A US 1986-824450 19860131; JP 06073472 B2 JP 1985-19324 19850205
FDT JP 06073472 B2 Based on JP 61177997
PRAI JP 1985-19324 19850205
IC **C12Q001-00; G01N031-22; G01N033-52**
ICS **G01N031-22; G01N033-52**
ICA C12Q001-26; C12Q001-28; C12Q001-34
AB JP 61177997 A UPAB: 19930922
Analytical element comprises at least a reagent layer and porous layer provided on carrier; with porous layer having enzyme dispersed and contg. necessary for reaction of converting given component into detectable substance, as mixt. with protein and/or polypeptide cpd. not contg. substances hindering substantially analysis and reaction, in porous layer.

Protein and polypeptide used are e.g. albumin, globulin, gelatin, gelatin decompsn. prod. etc. Enzyme used is e.g. hydrolase e.g. **cholesterol oxidase, lipoprotein lipase**, etc., dehydrogenase e.g. **cholesterol oxidase**, glucose **oxidase**, etc.

ADVANTAGE - Analytical element is useful for analysis of total blood, blood serum, blood plasma, urine etc. In analytical element storage stability of enzyme can be greatly raised and analysis of component in fluid sample, esp. biological fluid sample can be simply, rapidly and accurately carried out by common spectrophotometer using visible light without causing uneven colouring.

0/0
FS CPI EPI
FA AB
MC CPI: A03-C01; A12-V03C2; B04-B02C2; B04-B02C3; B04-B04A6; B04-B04B; B04-B04D; B04-C03D; B11-C07B2; B12-K04A; J04-B01; J04-C04
EPI: S03-E09E; S03-E14H
ABEQ US 4914020 A UPAB: 19930922
Analytical element, for the analysis of a specific component in a fluid, comprises a) support; b) a layer contg. a reagent provided on a); c) a spreading layer provided on b), layer c) having a porous structure; and d) a dispersion mixt. contained in the porous structure of c) and including a mixt. of an enzyme and a protein and/or polypeptide formed by freeze-drying a mixt. (I) from its aq. soln.

The enzyme is of a type supporting a reaction with the specific component to produce a prod. capable of being detected with the reagent. The protein and/or polypeptide is free from a cpd. which disturbs the reaction or analysis, whereby the protein and/or polypeptide prevent rapid deterioration of the enzyme.

ADVANTAGE - The new element is caused to contain the enzyme that catalyzes a reaction system necessary for measuring an object to be tested, while keeping the activity of the enzyme.

L112 ANSWER 36 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1986-172681 [27] WPIX
DNC C1986-074293
TI Enzyme-contg. compsn. - contg. **lipoprotein-lipase** and/or **cholesterol-esterase** and e.g. polyoxyethylene O-phenyl phenol ether surfactant.
DC A96 B04 B05 D16
PA (TOYM) TOYOBO KK
CYC 1
PI JP 61104798 A 19860523 (198627)* 5p
JP 05049279 B 19930723 (199332) 6p C12Q001-44 <--
ADT JP 61104798 A JP 1984-225176 19841025; JP 05049279 B JP 1984-225176 19841025
FDT JP 05049279 B Based on JP 61104798
PRAI JP 1984-225176 19841025
IC **C12Q001-46**

ICM **C12Q001-44**
ICS **C12Q001-26; C12Q001-46**
ICA C12Q001-60; C12Q001-61
AB JP 61104798 A UPAB: 19930922
Compsn. contains **lipoprotein-lipase** and/or **cholesterol-esterase** and the surfactant of **cholesterol-esterase** and the surfactant of formula (I).
In (I), A is H, 1-18C aliphatic group, alicyclic group or aromatic gp.; B is aryl, aralkyl, -O(RO)n-, polyethylene or polyethylene oxide-polypropylene oxide block copolymer gp.; n is 2-60, m is 0-4, p is 1-5 and m+p=1-5.
Examples of the surfactant (I) are polyoxyethylene -o-phenyl -phenolether, polyoxyethylene -2-phenyl -4-octylphenylether, polyoxyethylene -4,5,6-tribenzyl -2-phenylphenolether, polyoxyethylene -2-naphthyl -4-isooctylphenolether, etc..
USE/ADVANTAGE - By using the specific surfactant (I) together with enzyme, the adsorption of enzyme can be prevented and determn. can be practiced correctly.
0/0
FS CPI
FA AB
MC CPI: A10-E08B; A12-V03C2; B01-D02; B04-B01B; B04-B02C3; B04-C03B; B04-C03C; B11-C08E3; B12-K04A; B12-M09; D05-A02C; D05-H09
ABEQ JP 93049279 B UPAB: 19931118
Compsn. contains **lipoprotein-lipase** and/or **cholesterol-esterase** and the surfactant of **cholesterol-esterase** and the surfactant of formula (I).
In (I), A is H, 1-18C aliphatic gp., alicyclic gp. or aromatic gp.; B is aryl, aralkyl, -O(RO)n-, polyethylene or polyethylene oxide-polypropylene oxide block copolymer gp.; n is 2-60; m is 0-4, p is 1-5 and m+p = 1-5.
Examples of the surfactant (I) are polyoxyethylene -o-phenyl -phenolether, polyoxyethylene -2-phenyl -4-octylphenylether, polyoxyethylene -4,5,6-tribenzyl -2-phenylphenolether, polyoxyethylene -2-naphthyl -4-isooctylphenolether, etc..
USE/ADVANTAGE - By using the specific surfactant (I) together with enzyme, the adsorption of enzyme can be prevented and determn. can be practiced correctly. (J61104798-A)

L112 ANSWER 37 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1984-301275 [49] WPIX
DNN N1984-224626 DNC C1984-128251
TI Determn. of analyte in specific fraction in biological fluid - after immunochemical removal of other fractions contg. the analyte.
DC B04 D16 J04 S03
PA (BOEF) BOEHRINGER MANNHEIM GMBH; (HEUC-I) HEUCK C C
CYC 13
PI DE 3319066 A 19841129 (198449)* 14p
WO 8404817 A 19841206 (198450) DE
RW: AT BE CH DE FR GB LU NL SE
W: JP US
EP 129696 A 19850102 (198502) DE
R: IT
EP 144367 A 19850619 (198525) DE
R: AT BE CH DE FR GB LI LU NL SE
JP 60501425 W 19850829 (198541)
EP 144367 B 19890329 (198913) DE
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3477516 G 19890503 (198919)
ADT DE 3319066 A DE 1983-3319066 19830526; WO 8404817 A WO 1984-EP148 19840517; EP 129696 A EP 1984-105599 19840517; EP 144367 A EP 1984-901995 19840517; JP 60501425 W JP 1984-502182 19840517
PRAI DE 1983-3319066 19830526
REP 2.Jnl.Ref; EP 8338; EP 92801; FR 2381311; WO 8002460; 1.Jnl.Ref
IC A61K039-00; **C12Q001-00**; **G01N033-54**
AB DE 3319066 A UPAB: 19930925
Direct determn. is effected by (a) removing other analyte (I) contg.

fractions by an immunochemical reaction and (b) determining (I) by chemical or biochemical methods.

Reagent for direct determn. of an analyte in a specific fraction of a biological fluid, characterised in that it does not contain the analyte or contains the analyte in amts. which do not interfere with the determn..

For determn. of LDL **cholesterol**, step (a) is effected by reaction with antibody to apolipoprotein A and/or C. For determn. of HDL **cholesterol**, step (a) is effected with antibody to apolipoprotein B. Enzymes may also be used to reduce the colloidal stability of the fraction(s) to be removed. Specified enzymes are neuraminidase, pronase, papain, triglyceride **lipase**, carboxyl **esterase**, **cholesterol esterase**, sphyngomyelinase and phospholipase.

USE - The process may be used to determine the amt. of **cholesterol** present in a particular **lipoprotein** fraction, e.g. low- or high-density **lipoprotein** (LDL or HDL).

0/0

FS CPI EPI
FA AB
MC CPI: B01-D02; B04-B02C; B04-B04C; B04-B04D; B11-C07; B12-K04; D05-A02; D05-H; J04-B01B
EPI: S03-E14H4
ABEQ EP 144367 B UPAB: 19930925
Process for the direct determination of lipids contained in LDL in body fluids, characterised in that antibodies against apolipoprotein A or C or antibodies against the apoliproteines A and C and one or more enzymes are added thereto which bring about that the colloid-chemical stability of the fractions to be removed is reduced and subsequently the direct detection of the lipid is carried out.

L112 ANSWER 38 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1984-020095 [04] WPIX
DNN N1984-015061 DNC C1984-008427
TI Measuring **lipoprotein cholesterol** level - by subjecting to electrophoresis then adding colouring agent contg. **cholesterol esterase** and dehydrogenase.
DC B04 D16
PA (NICM) NIPPON CHEMIPHAR CO
CYC 1
PI JP 58210000 A 19831207 (198404)* 3p
ADT JP 58210000 A JP 1982-92731 19820531
PRAI JP 1982-92731 19820531
IC **C12Q001-60; G01N027-26**
AB JP 58210000 A UPAB: 19930925
Sample is subjected to electrophoresis to fractionate **lipoprotein cholesterol**, and a colouring agent contg. **cholesterol esterase** (CE), **cholesterol dehydrogenase** (CDH) which is dependent upon NAD originated from anaerobes, NAD, diaphorase (DI) and NTB is contacted with the **lipoprotein cholesterol**.

The measurement of **lipoprotein cholesterol** level in serum is important for examination of diseases of coronary system, etc.

Sharp and clear coloured pattern can be obtd. in short time, and thus accurate measurement is possible. The colouring agent contains 10-15 microns of CE, 6-15 microns of CDH, 10-15 microns of DI, 10 -15 mMgof NAD and 0.5-1 mM of NTB. The colouring can be conducted by incubation of 35-38 deg.C for 20-40 minutes. The electrophoresis is conducted at 90V for 60-70 minutes.

0/0

FS CPI
FA AB
MC CPI: B01-D02; B04-B02C; B04-B02C2; B04-B03; B04-B04D; B07-D13; B11-C07B; B12-K04; D05-A02

L112 ANSWER 39 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1983-826719 [47] WPIX

DNC C1983-115335
TI Determn. of high density **lipoprotein cholesterol** in body fluids - with storage stable reagent contg. **cholesterol oxidase** and **esterase**.
DC A96 B04 D16 J04
PA (GOLD-I) GOLDBERG J M
CYC 2
PI US 4414326 A 19831108 (198347)* 7p
CA 1181671 A 19850129 (198509)
PRAI US 1982-345705 19820204
IC **C12Q001-60**
AB US 4414326 A UPAB: 19930925
Stable aq. enzymatic reagent for interaction in presence of **cholesterol** (I) to provide a measurable chromophore comprises **cholesterol oxidase** (ChO), **cholesterol esterase** (ChE) from an animal source, peroxidase (PO), 4-aminoantipyrine (II), an agent (III) capable of forming a chromophore, a bile salt (IV), a water-soluble polyglycol or approx. Mw 190-100 at 0.1-1 g/l and selected from polyethylene glycol and polyethoxy glycol, and, as stabiliser, water-soluble polyglycol of Mw 6000 or higher to maintain the solubility of free (I). The reagent is a pH 5.5-7.8.

The reagent is stable on prolonged storage, esp. when it is in 2 part form (the IV and the polyethylene glycol or polyethoxy glycol being in a separate second portion). Rapid and efficient determn. of a high density **lipoprotein** (I) in body fluids such as serum and plasma can be effected with the reagent, and the results are used in clinical diagnosis. Determn. of the high density **lipoprotein** (I) is used as an indication of the risk of coronary heart disease, and the other **lipoproteins** do not interfere with an approp. pptn. procedure.

FS CPI
FA AB
MC CPI: A05-H03; A12-V03C; B01-D02; B04-B01B; B04-B02C2; B04-B02C3; B04-B04A; B04-B04H; B04-C03C; B07-D08; B11-C08; B12-K04; J04-B01B

L112 ANSWER 40 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1983-766269 [38] WPIX
DNC C1983-089829
TI Low density **lipoprotein** fraction **cholesterol** specific determn. - in presence of high-density **lipoprotein** fraction using **cholesterol esterase** and **cholesterol oxidase** in the presence of surfactant.
DC B04 D16 J04
IN BARTL, K; RODER, A; WEHMEYER, G; ZIEGENHORN, J
PA (BOEF) BOEHRINGER MANNHEIM GMBH
CYC 13
PI EP 88420 A 19830914 (198338)* DE 21p
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3208253 A 19830915 (198338)
JP 58165800 A 19830930 (198345)
US 4544630 A 19851001 (198542)
EP 88420 B 19860924 (198639) DE
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3366371 G 19861030 (198645)
ADT EP 88420 A EP 1983-102231 19830307; US 4544630 A US 1983-468792 19830222
PRAI DE 1982-3208253 19820308
REP A3...8523; DE 2558536; EP 35211; No-SR.Pub; US 4186251; US 4226713
IC **C12Q001-60**
AB EP 88420 A UPAB: 19930925
New procedure is claimed for the specific determination of LDL-fraction **cholesterol** in the presence of the serum **lipoprotein** HDL fraction involving the use of **cholesterol esterase** to release the **cholesterol**, oxidation of the released **cholesterol** with **cholesterol oxidase** and oxygen to form H2O2 and cholestenone, and kinetic measurement of the change in one of the components of the **oxidase** reaction (esp. H2O2 formation). In this procedure, the measurement is carried out in a

predetermined time interval, and the reaction soln. is adjusted to a surfactant concn. of 0.01-1.5 mmol/l, a **cholesterol esterase** concn. of 0.1-30U/ml, and a pH of 6.5-8.0.

New reagent for carrying out the above procedure contains 200-1000 U/l **cholesterol oxidase**, 1000-3000 U/l peroxidase, 2000-10000 U/l **cholesterol esterase**, 0.10-0.16 mmol/l surfactant, 2-20 mmol/l phenol, 0.5-3 mmol/l 4-aminoantipyrine, and 70-130 mmol/l tris/HCl pH 7.3-7.7.

Determination of LDL (low density **lipoprotein**)fraction **cholesterol** for the differential diagnosis of lipid metabolism disorders, e.g. hyparcholesterolasmia of hypertriglyceridaemia leading to atherosclerosis and cardia infarct.

The new procedure permits direct enzymatic determination of LDL **cholesterol** without precipitation reactions of fraction separations. It is based on the finding that under specified surfactant concn., enzyme concn. and pH conditions enzymatic hydrolysis of the LDL-**cholesterol** is substantially faster than that of HDL-**cholesterol**.

0/3

FS CPI
FA AB
MC CPI: B01-D02; B04-B02C; B11-C08; B12-K04; D05-A02; J04-B01B
ABEQ EP 88420 B UPAB: 19930925

Process for the specific determination of the **cholesterol** of the LDL fraction in the presence of the HDL fraction of the **lipoproteins** of serum by the action of **cholesterol esterase** for the liberation of the **cholesterol** and oxidation of the liberated **cholesterol** with **cholesterol oxidase** and oxygen with the formation of H2O2 and cholestenone and kinetic measurement of the change of one of the reaction components of the **oxidase** reaction, especially of the H2O2 formation, characterised in that the measurement is carried out in a predetermined time interval and in the reaction solution there are adjusted a surfactant concentration of 0.01 to 1.5 mmol/l, a **cholesterol esterase** concentration of 0.1 to 30 U/ml and a pH value of 6.5 to 8.0.

ABEQ US 4544630 A UPAB: 19930925

Determination of **cholesterol** in a low density **lipoprotein** (beta-**lipoprotein**) serum fraction (in the presence of high density or alpha-serum **lipoproteins**) comprises addn. of a cholesterolesterase; the **cholesterol** liberated is oxidised with cholesteroloxidase and oxygen to form hydrogen peroxide and cholestenone, the concn. of one of which is measured as a function of time. The process is conducted over a predetermined interval of time, and the data allows the background **cholesterol** in the alpha-fraction to be evaluated and eliminated.

USE - The process is esp. applicable to routine clinical analysis for the diagnosis of cardiac infarction or atherosclerosis symptoms.

L112 ANSWER 41 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1983-40885K [17] WPIX
CR 1980-61216C [35]
DNN N1983-073760 DNC C1983-039944
TI Low or high specific gravity **lipoprotein** determn. - using reagent for specific pptn. of low specific gravity **lipoprotein**.
DC B04 D16
PA (WAKP) WAKO PURE CHEM IND LTD
CYC 1
PI JP 58048857 A 19830322 (198317)* 13p
PRAI JP 1978-162096 19781229; JP 1982-60567 19810910
IC **C12Q001-60; G01N033-68**
AB JP 58048857 A UPAB: 19930925

Determn. of **lipoproteins** of low or high specific gravity comprises using a reagent for specifically precipitating **lipoproteins** of low specific gravity which contains 30-300 mEq/l of one or more ions selected from alkali metal ions and ammonium ion as well as heparin and a manganese ion. Partic. in the determn. of

cholesterol by using reagents composed of **cholesterol oxidase, cholesterol** esterhydrase, peroxidase, activators or these enzymes and oxidisable colour-producing reagents, a buffer soln. comprising a water soluble amine (e.g. trishydroxy methylaminomethane, diethylbarbituric acid) or its salt and an acid (e.g. succinic acid, hydrochloric acid) is pref. used.

A large quantity of the precipitating reagent can be added to a small quantity of a sample and a relatively thin supernatant can be used in a large quantity. The requisite amt. of samples can be decreased, and determn. errors arising from absolute errors of the amts. of samples and reagents can be reduced.

FS CPI
FA AB
MC CPI: B01-D02; B04-B01B; B04-B04A; B12-K04; D05-A02

L112 ANSWER 42 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1983-37698K [16] WPIX
DNN N1983-068232 DNC C1983-036857
TI Analytical process for assaying free **cholesterol** - using reagent contg. fatty acid alkali salt to inhibit **lipo-protein lipase** activity.
DC B04 J04
PA (HITA) HITACHI LTD
CYC 1
PI JP 58041357 A 19830310 (198316)* 3p
JP 63050665 B 19881011 (198844)
ADT JP 58041357 A JP 1981-138476 19810904
PRAI JP 1981-138476 19810904
IC **C12Q001-34; G01N033-92**
AB JP 58041357 A UPAB: 19930925
The method is effected using synthetic resin-reaction container used for the reaction of sample for other assay items and the reagent after washing. The analytical reagent contains a fatty acid alkali salt to inhibit **lipoprotein lipase** activity. Free **cholesterol** concn. is obtd. by optically measuring the reaction liq.

Lipoprotein lipase is contained in free **cholesterol** and neutral fat analytical reagents. When assayed by using a resin container, **lipoprotein lipase** is adsorbed into the resin container, and free **cholesterol** value is apt to be increased. If a fatty acid alkali salt coexists when assayed, **cholesterol** ester is not converted to free **cholesterol**.

FS CPI
FA AB
MC CPI: B01-D02; B10-C04E; B11-C08; B12-K04; J04-B01

L112 ANSWER 43 OF 43 WPIX COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1978-60989A [34] WPIX
TI Determn. of total **cholesterol** in blood - comprises hydrolysing bonded **cholesterol** with **cholesterol esterase** in the presence of **lipoprotein lipase.**
DC B04 J04 S03 S05
PA (TOYM) TOYOBO KK
CYC 1
PI JP 53081194 A 19780718 (197834)*
JP 56019240 B 19810506 (198122)
PRAI JP 1976-157070 19761224
IC **C12Q001-60; G01N031-14; G01N033-16**
AB JP 53081194 A UPAB: 19930901
Determn. of total **cholesterol** in blood comprises hydrolysing bonded **cholesterol** with **cholesterol esterase** , and determining the liberated **cholesterol** with **cholesterol oxidase,** in the presence of **lipoprotein lipase.**

By using **lipoprotein lipase,** the amt. of **cholesterol** can be precisely determined even in high fat blood

serum, and the action of the **cholesterol esterase** is enhanced.

The reagent used consists of **cholesterol esterase**, **cholesterol oxidase** and **lipoprotein lipase** and opt. reagents for detecting hydrogen peroxide or cholestenone formed by the action o **cholesterol oxidase**. **Lipoprotein lipase** is pref. that produced from Pseudomonas strain, and should have activity >3 units per 0.01 ml of blood serum. The reagent for detecting hydrogen peroxide is of the catalse or peroxidase type, and the reagent of detecting cholestenone is e.g. hydrazine, 2,4-dinitrophenylhydrazine, etc.

Liberated **cholesterol** is treated with **cholesterol oxidase** to form hydrogen peroxide and cholestenone, and the hydrogen peroxide or the cholestenone is determined to obtain total **cholesterol** content.

FS CPI EPI
FA AB
MC CPI: B01-D02; B04-B02C2; B04-B02C3; B04-B04D; B05-C08; B11-C08; B12-K04; J04-B01B

=> d his

(FILE 'HOME' ENTERED AT 07:49:13 ON 18 DEC 2001)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 07:49:54 ON 18 DEC 2001
L1 1 S CHOLESTEROL/CN
L2 1 S CHOLESTEROL OXIDASE/CN
L3 1 S CHOLESTEROL DEHYDROGENASE/CN
L4 1 S CHOLESTEROL ESTERASE/CN
E LIPOPROTEIN LIPASE/CN
L5 1 S E3

FILE 'HCAPLUS' ENTERED AT 07:50:58 ON 18 DEC 2001
E WO2000-JP1172/AP,RPN
E WO2000-JP1172/AP,PRN
L6 1 S E3,E4
E KISHI K/AU
L7 120 S E3
E KISHI KOJI/AU
L8 21 S E3
E KAKUYAMA T/AU
L9 7 S E3,E5
E OCHIAL K/AU
E OCHIAI K/AU
L10 44 S E3
E OCHIAI KOJI/AU
L11 7 S E3
E HASEGAWA Y/AU
L12 341 S E3,E4
E HASEGAWA YUZO/AU
L13 12 S E3
E INTERNATIONAL REAGENT/PA,CS
L14 87 S E5-E14
L15 119 S (INT?(L)REAGENT#)/PA,CS
L16 32 S L15 NOT L14
L17 99 S L15 AND JAPAN/PA,CS
L18 99 S L14,L17
L19 20 S L15 NOT L18
L20 7129 S L2 OR L3 OR L4 OR L5
L21 9028 S CHOLESTEROL()(OXIDASE OR DEHYDROGENASE OR ESTERASE) OR (LIPOP
L22 9797 S L20,L21
E LIPOPROTEIN/CT
E E59+ALL
L23 52431 S E3,E34-E36,E43,E45,E59

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L24        71307 S E3+NT
L25         2366 S L22 AND L23
L26         2640 S L22 AND L24
L27         2640 S L25,L26
                 E BLOOD/CT
                 E E83+ALL
L28       107552 S E3,E2+NT
L29       501508 S E8+NT OR E9+NT OR E10+NT
L30          175 S L27 AND L28
L31          494 S L27 AND L29
L32          655 S L30,L31
L33           22 S L32 AND ION?
L34           18 S L32 AND (NONION? OR NON ION?)
L35           30 S L32 AND (SURFACTANT OR SURFACE ACTIVE)
L36           49 S L33-L35
L37          483 S L32 AND (L1 OR CHOLESTEROL)
L38           43 S L37 AND L36
L39           49 S L36,L38
L40          624 S L7-L13,L18
L41            6 S L40 AND L32,L37
L42            2 S L39 AND L41
L43            6 S L41,L42
L44            5 S L43 NOT URINE
L45           46 S L39 AND (BIOCHEM?(L)METHOD?)/SC,SX
L46            3 S L39 NOT L44,L45
L47           50 S L44,L45
L48           49 S L47 AND (BLOOD OR SERUM OR PLASMA OR PLATELET OR ERYTHROCYT?)
L49            1 S L47 NOT L48

     FILE 'REGISTRY' ENTERED AT 08:07:45 ON 18 DEC 2001

     FILE 'HCAPLUS' ENTERED AT 08:08:08 ON 18 DEC 2001
L50           49 S L6,L48

     FILE 'MEDLINE' ENTERED AT 08:13:57 ON 18 DEC 2001
L51          340 S L20
L52         8561 S L21
                 E CHOLESTEROL OXIDASE/CT
                 E E3+ALL
L53          291 S  E8/CT,CN
                 E E-HYDROXYSTEROID DEHYDROGENASES/CT
                 E 3-HYDROXYSTEROID DEHYDROGENASES/CT
L54         1944 S E3/CT,CN
                 E HYDROXYSTEROID DEHYDROGENASES/CT
L55         2785 S E3/CT,CN
                 E CHOLESTEROL DEHYDROGENSAE/CT
                 E CHOLESTEROL DEHYDROGENASE/CT
                 E CHOLESTEROL DEHYDROGENASE/CN
                 E E3+ALL
L56            4 S E1
                 E CHOLESTEROL ESTERASE/CT
                 E E3+ALL
L57         1009 S E10/CT,CN
                 E LIPOPROTEIN LIPASE/CT
                 E E3+ALL
                 E LIPOPROTEIN LIPASE/CT
                 E E3+ALL
L58         5527 S E10/CT,CN
L59        13128 S L51-L58
                 E LIPOPROTEIN/CT
                 E LIPOPROTEINS/CT
                 E E3+ALL
L60        53359 S E10,E18-E23
L61         1395 S L60/MAJ AND L59
L62          314 S L61 AND (CHOLESTEROL(L)BL)/CT
L63           14 S L61 AND (CHOLESTEROL(L)AN)/CT
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L64           1 S L63 AND (SURFACTANT OR SURFACE ACTIVE AGENT#)
L65           1 S L62 AND (SURFACTANT OR SURFACE ACTIVE AGENT#)
L66           6 S L62,L63 AND (ION? OR NONION? OR NON ION?)
L67           5 S L66 NOT BABOON
L68           6 S L64,L65,L67
                E BLOOD ANALYSIS/CT
L69         544 S E5./CT AND L61
L70         200 S E1./CT AND L61
L71          31 S BLOOD CHEMICAL ANALYSIS+NT/CT AND L61
L72          17 S BLOOD PHYSIOLOGY+NT/CT AND L61
L73          38 S G9./CT AND L61
L74          68 S L71-L73
L75          25 S L62 AND L74
L76           1 S L74 AND DETERMINATION/TI
L77           7 S L68,L76
L78          43 S L74 NOT L75-L77
                E SURFACE-ACTIVE AGENTS/CT
                E E3+ALL
L79          24 S E6+NT AND L61
                SEL AN 1-10 15 19 23
L80          13 S L79 AND E1-E13
L81          17 S L77,L80
                E REAGENT/CT
                E E7+ALL
L82           5 S L61 AND E13+NT
L83          19 S L81,L82
L84          19 S L51-L83 AND L83

     FILE 'MEDLINE' ENTERED AT 09:06:31 ON 18 DEC 2001

     FILE 'WPIX' ENTERED AT 09:06:45 ON 18 DEC 2001
                E WO2000-JP1172/AP,PRN
L85           1 S E3
                E KISHI K/AU
L86         110 S E3
                E KAKUYAMA T/AU
L87           5 S E3
                E OCHIAI K/AU
L88         153 S E3-E5
                E HASEGAWA Y/AU
L89         406 S E3-E6
L90          21 S (INT?(L)REAGENT#)/PA
                E ITRE/PACO
L91         140 S E4,E5
L92         141 S L90,L91
L93         561 S L21
L94        2410 S  LIPOPROTEIN OR LIPO PROTEIN
L95         212 S L93 AND L94
L96          28 S L95 AND G01N033-92/IC,ICM,ICS
L97         111 S L94 AND (C12Q001-32 OR C12Q001-26 OR C12Q001-44 OR C12Q001-60
L98          49 S L97 AND L95
L99         212 S L95,L98
L100          2 S L92 AND L93
L101          5 S L92 AND L94
L102          5 S L100,L101
L103          4 S L102 NOT URINE/TI
L104          4 S L85,L103
L105         83 S L99 AND CHOLESTEROL
L106         57 S L105 AND (C12Q OR G01N)/IC,ICM,ICS
L107         16 S L106 AND (CENTRIFUG? OR MICROBIAL OR MULTILAYER OR TETRAZOL?
L108         41 S L106 NOT L107
L109         43 S L104,L108
L110         43 S L85-L109 AND L109
L111         40 S L110 AND (OXIDASE OR DEHYDROGENSE OR ESTERASE OR LIPASE)
L112         43 S L110,L111
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FILE 'WPIX' ENTERED AT 09:24:03 ON 18 DEC 2001